The New England
Journal of Medicine

VOLUME 216 FEBRUARY 11, 1937 NUMBER 6

PELVIC INCLINATION: A FACTOR IN SLIPPED EPIPHYSIS AND NONUNION OF FRACTURE OF THE HIP*

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THE effect of the inclination of the pelvis on the head and neck of the femur depends on several factors. These factors concern not only the acetabulum and the head, neck and shaft of the femur but also the shape and position of habitual use of the rest of the body. It is not possible in the limited time to describe the various types of pelves and acetabula. Suffice it to point out only the extreme differences. On the one hand there is the vertical pelvis (fig. 1) seen in the slender anatomic structure, and on the other hand the flaring, broad pelvis, seen in the heavy structural type (fig. 2). Between these two extremes there is every possible variation, all of which have been described elsewhere. The acetabulum varies not only in its depth, but also in its plane or obliquity from one that is nearly vertical to one that is nearly horizontal (figs. 3 and 4).

FIG. 1. X-ray of the vertical type of pelvis found with the slender anatomic structural type.

FIG. 2. X-ray of the broad type of pelvis with the wide flaring ilia found in the heavy anatomic structural type.

The bony structure of the ilium in the region of the acetabulum is important from the point of view of weight bearing and of the direction of the forces coming with weight bearing on the head and neck of the femur. When the pelvis is held so that the sacrum is nearly vertical (fig. 5), a position found with a flat lumbar spine, the head of the femur supporting the weight of the body comes directly under the thickest part of the acetabulum. In this posi-

FIG. 3. X-ray showing a relatively shallow acetabulum in the vertical plane and, also, a long femoral neck.

FIG. 4. X-ray showing a deep acetabulum in the more horizontal plane and, also, a short femoral neck.

*Read before the American Orthopaedic Association in Milwaukee, June, 1936.

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tion the weight-bearing line through the shaft of the femur extends upwards through the thickest part of the acetabulum, through the thickest and strongest part of the ilium and, if extended still further, is anterior to the sacroiliac joints and passes through or slightly posterior to the lumbosacral joints. On the other hand, when the ilium and pelvis are inclined forward, as is found with an exaggerated lumbar curve (fig. 6), giving the so-called horizontal sacrum, the head of the femur, with the weight of the body upon it, comes under the posterosuperior or thin part of the acetabulum. In this position the weight-bearing line through the shaft of the femur is posterior to the sacroiliac and lumbosacral joints.

FIG. 5. X-ray of ligamentous specimen of the hip joint, ilium and lumbosacral joints with the pelvis held so that the sacrum is nearly vertical, a position found with a flat lumbar spine. The head of the femur supporting the weight of the body comes directly under the thickest part of the acetabulum. In this position the weight-bearing line through the shaft of the femur extends upward through the thickest part of the acetabulum, through the thickest and strongest part of the ilium and, if extended still further, is anterior to the sacroiliac and passes through or slightly posterior to the lumbosacral joints.

The next consideration is the hip joint and the head and neck of the femur. Only a few points will be mentioned. The neck of the femur may be relatively short (fig. 4) or it may be very long (fig. 3). There may be a considerable variation in the amount of anterior torsion and a marked difference in the direction or the plane of the epiphyseal line. In some the latter may be nearly horizontal (fig. 7) and in others it may be oblique or even vertical (fig. 8).

FIG. 6. X-ray of ligamentous specimen of the hip joint, ilium and lumbosacral joints with the ilium and pelvis inclined forward, as is found with an exaggerated lumbar curve, giving the so-called horizontal sacrum. The head of the femur with the weight of the body on it comes under the posterosuperior or thin part of the acetabulum. In this position the weight-bearing line through the shaft of the femur is posterior to the sacroiliac and the lumbosacral joints.

The most important structure in the region

FIG. 7. X-ray showing a relatively horizontal epiphyseal line between the head and neck of the femur.

FIG. 8. X-ray showing a more vertical epiphyseal line.

of the hip joint from the point of view of this study is the iliofemoral or Y ligament. This arises from the anterior portion of the acetabulum below the anterior inferior spine of the ilium and is inserted into the intertrochanteric line on the front of the femur (fig. 9). An

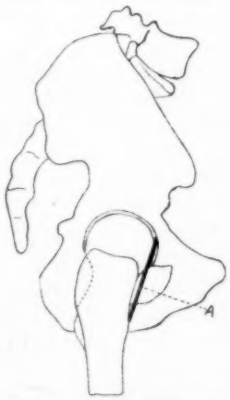

FIG. 9. Diagrammatic tracing of x-ray showing (A) how the iliofemoral ligament forms a bridge over the neck of the femur between the head of the femur and the intertrochanteric line.

examination of ligamentous specimens shows that this ligament is tight in the upright position whether the femur is rotated outward or is straight ahead. In either of these positions, however, it is important to note that the ligament forms a bridge over the neck of the femur between the head and the intertrochanteric line and that in no position of the hip joint does it touch the neck of the femur itself. With the pelvis tilted backwards and the femur in the straight or even inwardly rotated position (fig.

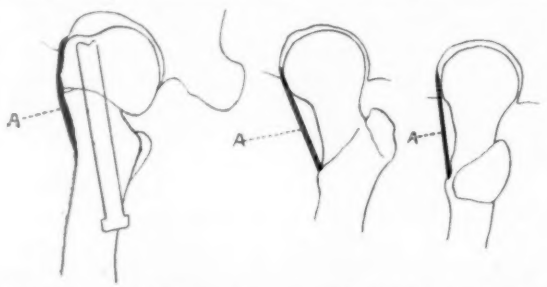

FIG. 10. The first tracing was made from a postoperative x-ray of a nailed fracture of the neck of the femur showing how the torsion strain upon the neck has forced the proximal fragments forward so that they press against the iliofemoral ligament (A). Compare with the ligament in the other diagrams, one with the femur in slight external rotation and the other in the straight position.

5), the weight of the body comes directly downward through the strongest part of the ilium and acetabulum upon the head so that the thrust forces the head into the neck and the iliofemoral ligament acts as a supporting structure. When, however, the pelvis is tilted forward (fig. 6) and the femur is outwardly rotated, the thrust of the body weight tends to push the head of the femur forward and against the iliofemoral ligament. The ligament being strong does not give. This forward pressure, if it were not for the iliofemoral ligament, would tend to cause a subluxation of the head of the femur out of the acetabulum. Since this force is not able to subluxate the head of the femur, it results in an increased torsion or sheering force applied directly upon the neck of the femur at a point where it is not supported by the iliofemoral ligament (fig. 10). The amount of this torsion force is directly dependent upon many of the factors that have already been mentioned, such as the depth and obliquity of the acetabulum, the length and amount of anterior torsion of the neck of the femur, and so forth.

A B

FIG. 11. A. Faulty body mechanics. Note that in faulty body mechanics the abdomen and pelvis have moved forward and are over the front part of the foot. This results in an increased lumbar curve with compensatory curves in the rest of the body. Of even more importance is the fact that, as the abdomen and pelvis sway forward and the upper body backward, the hip joint is placed in a position of extension. This position, combined with the external rotation of the feet, causes the torsion strain on the necks of the femora, as mentioned in the text.

B. Good body mechanics. Note that the position of the abdomen, pelvis and body is such that the torsion strain is reduced to a minimum.

There is still another factor of a mechanical nature, which becomes active as soon as weight bearing is allowed and which tends to increase the torsion force on the femoral neck if the faulty mechanics of the whole body has not been corrected during the period of recumbent convalescence. In the standing position the only stable point is the place where the feet touch the ground. From this point the body may sway forward or backward. In faulty body mechanics the abdomen and pelvis sway forward (fig. 11)

so that they are more over the front part of the foot than in the position of good body mechanics. This causes an imbalance of the rest of the body, which results in two conditions important in this discussion. On the one hand, there is an increase of the lumbar curve with its consequent compensatory curves in the rest of the body. On the other hand, as the body and pelvis sway forward, the hip joint is placed in a position of extension, which in some cases may be extreme. In this position of extension the shape of the acetabulum and of the head of the femur and the length and anterior torsion of the neck determine how much forward inclination of the pelvis is possible. The greater the forward inclination of the pelvis, the greater is the torsion strain on the neck itself. Because of anatomic and mechanical variations it is not possible to state that a forward inclination of the pelvis of so many degrees is standard or normal. The important point is whether the inclination of the pelvis under consideration is at or near its possible extreme position, because what is possible for one individual would be impossible for another. To put this in another way, a position that would be one of great strain for one individual would not necessarily cause strain in another, since it would not be at or near an extreme of its possible motion.

It is well known that, even in the hands of the most experienced, the results of any form of treatment of slipped epiphyses or fractures of the neck of the femur leave much to be desired. An understanding of all the factors that increase the torsion or sheering force on the fracture line would make it logical to utilize the long period of recumbency during convalescence for correcting the faulty mechanics of the body as a whole, as well as of the fracture itself.

The point of this paper is to bring to your attention that it is not only necessary to obtain as perfect alignment of the head and neck as is possible, but that it is equally important to prevent the torsion strain that must come upon the epiphyseal or the fracture line when weight bearing is begun. This can be accomplished during the period of recumbency by proper training in the correction of the forward inclination of the pelvis with its consequent superimposed faulty mechanics of the rest of the body.

PREVENTIVE INOCULATIONS

BY DWIGHT O'HARA, M.D.*

THE status of any preventive practice is subject to forces that constantly tend to mold it, either into practical usefulness or desuetude according to its merits. This molding process separates our initial enthusiasms and wistful expectations from the more substantial facts upon which enduring preventive procedure must rest. Time has always to be reckoned with in this process; so much so that every attempt to place a value upon a preventive method becomes relative to current knowledge, belief and thought. This being so, one can discuss the present title only in so far as he is willing to encounter controversial material and express himself concerning it. With this understanding I propose to consider seven procedures, the practice of which is sufficiently widespread to force each of us to come to some conclusion in regard to their efficacy. Those practices which are routinely undertaken after exposure has taken place, such as the Pasteur prophylactic treatment for rabies, should be considered early therapeutic measures, and they have been intentionally omitted. The other prophylactic agents I have arranged in what seems to me to be the order of their value, as follows: vaccine virus, diphtheria toxoid and toxin-antitoxin, typhoid vaccine, scarlet fever toxin, respiratory vaccines, measles globulins, pertussis vaccines.

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VACCINE VIRUS

Any discussion of vaccination against smallpox is largely a gesture to orthodox belief and practice in this Commonwealth. It should be thought of as the first, and still the greatest, preventive practice, but one that is not as yet applied in the easiest and most efficient manner. Present custom calls for the vaccination of children just before their first attendance at school. This custom has several disadvantages: (1) it allows the younger children to remain unprotected; (2) it deals with them at an age when mental apprehensions may have become well-developed; (3) it exposes them unnecessarily to the remote danger of vaccinal encephalitis; and (4) it allows occasional coincidences to occur between vaccination and the infections and other vicissitudes of the romping age.

Vaccination under the age of 1 year not only eliminates all of these disadvantages but produces less constitutional reaction than it sometimes does in later years. Universal vaccination at this age might also help to dispel the common but incorrect belief that one successful "take" of vaccinia protects for life. Revaccination in early adult life is now held to be desir-

able for the complete protection of any community. I think it is a fair prediction that any doctor who has vaccinated half a dozen infants under the age of 1 year will prefer this practice to the present custom of waiting until school age has arrived.

DIPHTHERIA TOXOID AND TOXIN-ANTITOXIN

The needful thing to emphasize about diphtheria prevention is also the desirability of early inoculatiou. Between the ages of 6 months and 1 year is the time of choice, and toxoid in three or four doses is the best immunizing substance. Above the age of 6 years toxoid should be used only after testing for sensitivity, as an occasional severe reaction occurs in the older age groups. A preliminary Schick test at the older ages is also called for, so that diphtheria immunization loses its simplicity after the age of 6 years. Inasmuch as most of the mortality from diphtheria occurs before this age, we have two reasons for protecting every individual at the age of 6 months.

From the public health point of view diphtheria is apparently not eliminated from any community until approximately 30 per cent of its children under the age of 5 years are protected.

In regard to the other immunizing agents we should remember that toxin-antitoxin is still valuable in protecting older groups, such as medical students and nurses. Furthermore, any who have been using Haven's alum toxoid (a one injection method) should be aware of the fact that the negative Schick tests produced thereby are relatively transient, and that as high as 80 per cent may be positive again within 6 months. This agent has, therefore, practically disqualified itself for the present.

Our diphtheria mortality curve for the past 50 years shows a more abrupt drop than any other except that for typhoid fever. It should be noted that its downward course began before the general use of therapeutic antitoxin, and continued before the widespread introduction of prophylactic toxin-antitoxin mixtures. The introduction of these measures may have accelerated its downward course, but there has been, in the background, a generalized tendency for all infectious diseases to do the same thing. One can be sure that the diphtheria mortality rate will not reach zero, which that for smallpox did for the first time during the past 5 years, until a considerable percentage of our infants are protected.

TYPHOID VACCINE

The progressive reduction in the incidence of typhoid fever has been due, first, to public sanitation; secondly, to the proper handling of food supplies; thirdly, to the recognition of typhoid carriers; and, finally, perhaps to a small extent, to the use of typhoid vaccine. The preventive reputation of typhoid vaccine comes largely from its position on the band wagon, for there is little or no direct evidence of its value, and it is well known that vaccinated individuals are promptly infected if they ingest a sufficiently large or potent dose of bacilli.

The best evidence that typhoid vaccine confers an increased resistance to infection comes from the mortality rates for the U. S. Navy. Compulsory vaccination against typhoid fever was instituted in the Navy in 1911 and 1912. Immediately thereafter there was a sharp drop in the Navy typhoid mortality rate as contrasted with a more gradual decline for the registration area of the United States as a whole. Assuming improvements in sanitation during this period to have been roughly similar, this sharp drop is suggestive that universal vaccination in the Navy was effective. In civilian life typhoid vaccination seems to have found its own level—that of a luxury for those who travel in foreign countries.

SCARLET FEVER TOXIN

The complicated problem of streptococcus infection is far from being solved. The feasibility of preventing the scarlet fever rash is now well agreed upon, but the advantage of such prevention is open to wide differences of opinion. My own opinion is that scarlet fever is a legal, not a biologic, entity. Its mortality rate has been decreasing for 100 years, and at the same comparative speed as that for puerperal fever, erysipelas or other streptococcic infections. I find it difficult to draw the lines between these diseases, as well as between them and many cases of such poorly understood afflictions as acute rheumatic fever and acute hemorrhagic nephritis. Nevertheless, others feel that an antitoxic immunity against scarlet fever confers an added protection against the septic attack of the streptococcus. Be that as it may, the prevention of scarlet fever has certain legal advantage in allowing the avoidance of quarantine, and is perhaps justifiable among nurses and other attendants on the sick.

Antitoxic immunity can be produced and measured by inoculations with scarlet fever toxin. Occasional severe reactions seem to be unavoidable but appear to be entirely harmless. If the virulence of scarlet fever were to return, this would be the only straw for us to grasp. Whether it would prove to be anything more than a straw we do not know. Extensive efforts have been made to control epidemics of scarlet fever, but outside of institutions and apart from the finding of infected food supplies they have had no demonstrable effect. In Milwaukee the

exclusion of younger children from school seemed to postpone the completion of a scarlet fever epidemic. This may at times have certain advantages.

RESPIRATORY VACCINES

Any discussion of the value of respiratory vaccines is colored by the disposition and philosophy of those who discuss it. One hears of people who have pneumonia every year if they fail to take their vaccines, and of people who come down with lobar pneumonia 24 hours after taking a large dose of vaccine. While such experiences suggest that vaccine may produce specific reactions, both negative and positive, it is hazardous to draw any conclusion as to cause and effect between what may be a nonspecific protein reaction and infectious episodes as common as those of the respiratory tract.

The "cold" is the commonest infectious disease. It is apparently due to a filtrable virus, which can be kept viable in vitro. This virus has an incubation period of approximately 36 hours. A "cold" is most contagious during the first 72 hours, after which its contagiousness rapidly diminishes. At this stage a well-known change takes place. The previous watery secretions are replaced by thicker and more purulent material, and the numbers of pneumococci, streptococci or influenza bacilli increase enormously, changing the nasal and pharyngeal flora from whatever the previous basic flora may have been to whatever the prevailing type of invading organism may be. That the virulence of some of these invaders is startling has become apparent since we have been doing routine differential typing of pneumococci at the Boston City Hospital. Last winter we admitted a man with type 5 pneumococcus pneumonia within a day of the time that his sister was admitted with the same type of pneumonia on another service. They both died. A diabetic patient, who was up and around the ward, did what he could to help this man and he, too, promptly contracted type 5 pneumococcus pneumonia and died. Such explosions would be remarkable with a less common disease, but they are often masked and overlooked in the larger annual harvest of respiratory infections.

Appreciation of this sequence from a light upper respiratory infection to actual lung involvement, leads to its recognition as the commonest single characteristic of lobar pneumonia —just as high driving speed is the commonest single cause of automobile accidents. While there is no evidence that we can influence the incidence of the initial "cold", it is quite probable that vaccines can produce a certain amount of resistance to some of the secondary invaders. The problem is to produce the resistance in the proper person, at the right time and against the appropriate organism. This means recourse to shotgun methods by which we may hope to influence the incidence of pneumonia through building a partial resistance to some of its causative organisms before they have been given an opportunity to invade in the wake of a "cold". Whenever we administer these respiratory vaccines, we should make sure that the recipient also gets the idea that every "cold" is a potential pneumonia and should be treated accordingly. In this way we could probably double whatever modifying effect it is possible to exert with vaccines on the seasonal activities of the more severe respiratory infections.

MEASLES GLOBULINS

It is now 20 years since the first attempt to transfer a passive resistance to measles was reported. Since that time we have encountered three agents and two words. The agents are convalescent serum, normal adult serum and placental extract. The words are "protection" and "modification". Although I have used all three agents I have not collected sufficiently accurate data upon which to make a comparison of their respective merits. My impression is that convalescent serum is distinctly superior to the other two. I am sure that I have used both adult serums and placental extracts that were without effect.

Although the largest amount of information seems to have been gathered concerning cases treated with placental extract, it has apparently been gathered from the observations of a large number of individuals. In its interpretation it has been assumed that each instance in which the disease did not develop after treatment was an example of protection and that every mild case of measles was a case that had been modified. The remaining cases, between 6 and 7 per cent of the whole, are quoted as cases in which the placental extract "failed" to exert either its protecting or modifying effect.

My feeling about measles in the community is that there are a large number of hearsay exposures which are not followed by the disease, that measles is usually a relatively mild disease, that it may even be so mild as to be unrecognized, and that not more than 6 or 7 per cent of the cases are severe in years with a normal incidence of respiratory disease. We have only grossly empirical evidence for the effect of placental extract, and the same may be said of convalescent serum and normal adult serum. On the one hand, the difficulty of recognizing true exposure, of making it uniform, of establishing normal attack rates and, even, of timing the incubation periods makes scientific chaos of the initial observations. On the other hand, a few cases of measles in monkeys, if the animals were carefully inoculated and treated, would tell us all we want to know. Here is

a simple experiment, crying to be done and surely deserving to be done before another thousand children are inoculated against measles.

PERTUSSIS VACCINES

A recrudescence of enthusiasm for active immunization against whooping cough has brought the question of its value to the surface for the third time. In answering this question one is forced to take a stand of some sort. There are three positions that may be taken. First, one may advise its use on the assumption that it can do no harm. This is plausible reasoning; it avoids the question of whether it can do good, and does not commit one to anything. Secondly, one may advise its use because other doctors are using it, or because it is recommended by those who have to write an article every day for the "happy baby columns" of the public press. This is practical reasoning, but it commits one as having passed upon the evidence and as approving of the practice, at least superficially. Thirdly, one may examine the evidence and conclude perfectly properly, that there is no justification for the belief that whooping cough vaccine has any significant effect upon the attack rate among inoculated children. This is inductive reasoning; only by following it can we be certain to avoid the charge of again crying "Wolf, Wolf!"

It should be remembered that the individuals who are sufficiently apprehensive to be inoculated against any disease are probably taking all other precautions more seriously Their exposures will probably be lighter and less frequent. The rate of incidence in this group will be lower.

SUMMARY

In summary I would call your attention to the mortality curves of pneumonia, measles and whooping cough (fig. 1). They have followed the general tendency, but in a way that perhaps distinguishes them from the others. The rise in the pneumonia rate for the 5 year period, from 1916 to 1920 inclusive, was largely due to the exalted virulence of the influenzal pneumonias of 1918 and 1919, but these were years of national mobilization, and its effect is also clearly seen in the measles and whooping cough curves. None of the others are affected to any significant degree. This suggests the point of view that measles and whooping cough are essentially respiratory infections. We have reason to hope that smallpox, diphtheria and typhoid fever are being wiped out. We have reason to pray that the virulence of scarlet fever will not return. But there is no reason for expecting the next pandemic of influenza to be any better controlled than the last, and there is every rea-

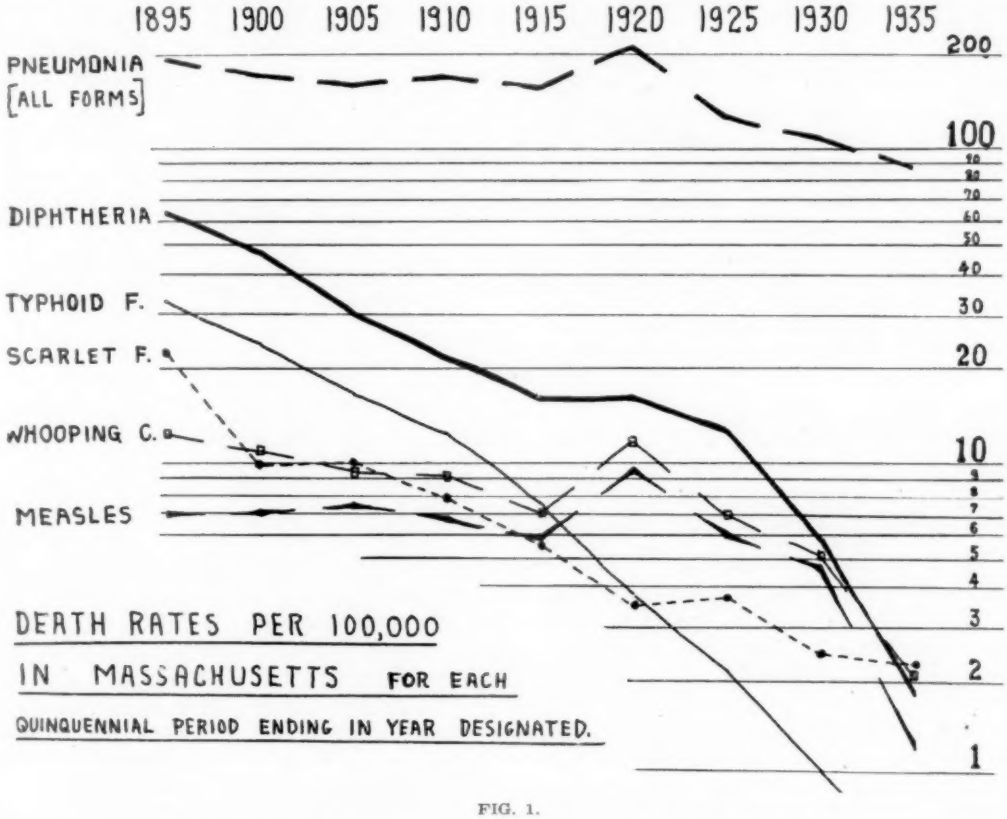

FIG. 1.

son for expecting it to affect the mortality rates of coincident measles and whooping cough, as well as pneumonia, if those diseases are not preventable before that time, which I do not think they will be.

The preventive possibilities for these seven procedures may be grouped and briefly characterized as follows:

GROUP A. Smallpox and diphtheria: The direct prevention of these two diseases is the birthright of every child. Their prevention can be simplified and made more effective by prophylactic treatment between the ages of 6 and 12 months.

GROUP B. Typhoid fever, scarlet fever and respiratory infections: The individual can be given only an indefinite or equivocal resistance against these diseases. Inoculations therefor may well be considered luxuries.

GROUP C. Measles and whooping cough: With the probable exception of the use of convalescent serum for measles, the evidence of our ability to affect these diseases by inoculation is visionary. All attempts to do so in clinical practice are experimental and should be so regarded.

REFERENCES

Godfrey, E. S., Jr.: A study in the epidemiology of diphtheria in relation to the active immunization of certain age groups. Am. J. Pub. Health **22**:237 (March) 1932.
Fraser, D. T. and Halpern, K. C.: Diphtheria toxoid; comparison of one dose of alum precipitated with three doses of unmodified toxoid. Canad. Pub. Health J. **26**:10 (Oct.) 1935.
Pansing, H. H. and Shaffer, E. R.: Detailed study on diphtheria immunization with one dose alum precipitated toxoid. Am. J. Pub. Health **26**:786 (Aug.) 1936.
Cook, S. S.: Efficacy of typhoid prophylaxis in the United States Navy. Am. J. Pub. Health **25**:251 (March) 1935.
Forrest, A. W.: Scarlet fever control on modern times. Public Health (London) **49**:12 (Sept.) 1936.
Koehler, J. P.: Recent experiences in scarlet fever control. Am. J. Pub. Health **25**:1359 (Dec.) 1935.
Burky, E. L. and Smillie, W. G.: Nasopharyngeal flora in health and during respiratory disease in isolated communities in Alabama and Labrador. J. Exper. Med. **50**:643 (Nov.) 1929.
Finland, M., and Tilghman, R. C.: Bacteriological and immunological studies in families with pneumococcic infections. J. Clin. Investigation **15**:493 (Sept.) 1936.
Robinson, E. S. and McKhann, C. F.: Immunological application of placental extracts. Am. J. Pub. Health **25**:1353 (Dec.) 1935.
Eley, R. C.: The control of measles. New Eng. J. Med. **213**:195 (Aug. 1) 1935.
Blake, F. G. and Trask, J. D., Jr.: Studies on measles; acquired immunity following experimental measles. J. Exper. Med. **33**:621 (May) 1921.
Blake, F. G. and Trask, J. D., Jr.: Studies on measles. J. Exper. Med. **33**:385, 413 (March) 1921.
Doull, J. A., Shibley, G. S. and McClelland, J. E.: Active immunization against whooping cough. Am. J. Pub. Health **26**:1097 (Nov.) 1936.

DERMATITIS FROM PHENYLHYDRAZINE COMPOUNDS

Report of a Case

BY J. G. DOWNING, M.D.*

PHENYLHYDRAZINE has many varied uses. It is used in chemistry for the identification of aldehydes and ketone, in industry for the manufacture of dyes and in medicine, to a limited extent, in the treatment of polycythemia vera and purpura hemorrhagica. It is a known blood and general protoplasmic poison. Eleven phenylhydrazine compounds have been studied by von Oettingen and Deichmann-Gruebler,[1] and it was found that the toxicity of the compounds by subcutaneous injection depends on their solubility in water, that the substitution of one hydrogen atom of the hydrazine group reduces the toxicity considerably, and that the toxicity may be further reduced by an active group in the substituent. They showed that phenylhydrazine may be absorbed in sufficient quantities from the skin to cause systemic effects, and that, following the use of a 1 per cent ointment in vaseline locally on the skin of rats, there was a loss of hair with changes in the surface epithelium consisting of keratinized proliferation and infiltration with leukocytes in various stages of degeneration.

Various reports have shown that these compounds are occupational hazards, for exposure in dust or vapor form may cause pruritus, eczema, nodular dermatitis, edema (especially of the exposed surfaces), intestinal colic, diarrhea, fatigue and anemia. Hueper[2] has found that rats injected with lethal or sublethal doses of several hydrazine derivatives develop more or less severe degenerative lesions in various organs, such as the liver, heart, spleen, kidney, testis and brain, in addition to manifestations of vascular and circulatory disturbances.

The following case shows the need of knowing the hazard of each and every new chemical introduced into an industrial process.

CASE REPORT

W. W., an American, male, 25 years old, married, with three children, was first seen on April 27, 1936. He had been a rubber mill operator for 14 months, but had stopped work April 16, 1936, because of disability due to a skin eruption. Occupation exposed him to raw and reclaimed rubber stock, whiting, clay, zinc oxide, blue lead and carbon black. He mixed the chemicals with the rubber; the chemicals were scooped into the machine with a shovel, at which time powder got on his exposed skin. Contact with the above substances caused him no trouble, but 3 weeks previous to his present illness he was exposed to a new compound in powder form, named R. P. A. No. 1. This substance is described in the manufacturer's literature as being a compound of zinc chloride and phenylhydrazine, a finely divided solid with specific gravity of 1.095. It is reported by the manufacturer to be safe to handle. By chemical action on raw and mixed rubber this sub-

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stance materially reduces the time of breakdown of rubber. A batch consists of 40 lb. of rubber and 4 oz. of the chemical. The first contact with this substance, which lasted 1 hour, was about 3 weeks previous to his present illness, when 4 ounces were weighed out and sprinkled into the mill, which is heated by steam. No apparent ill-effects were experienced by this contact. On April 6, 1936, the man ran through about thirty batches in which he used the above-mentioned compound, and about 4.30 that afternoon he noticed that his left eyelid started to swell, the eye was bloodshot, and a rash appeared on both hands and arms, which became itchy and swollen. He later developed "sores" on his face. He remained away from work until April 13, and was put back on the same job because his foreman laughed when told that the local physician had diagnosed the eruption as industrial. He worked 3 days without contact with the new chemical and on the fourth day, April 16, he had to use the same substance in putting through fifteen batches of rubber. He was forced to stop work because of the swelling of his eyes, face, hands and forearms. He claims that he lost his sense of smell and taste and that warm foods seemed to burn his tongue and mouth, and he developed a hard, dry cough. Later, "sores" appeared on his face and hands, which were slowly clearing up; his sense of taste returned, and the cough disappeared.

Physical examination showed a well-developed and nourished man. The oral cavity was negative. His entire skin surface was negative except for an impetiginous lesion on the left side of his nose and on the dorsa of both hands, which were erythematous, edematous and desquamating, especially on the adjacent aspects of the second, third, fourth and fifth fingers of each hand.

He was patch tested on the right upper arm with the powder. It was applied moistened with water and also in the dry state. Twenty-four hours later, at the site of the wet application, the powder had turned to a bright orange color, and there was an area, about 1 cm. in diameter, of erythema and edema. At the site of the dry powder, which had turned to a light brown color, the skin was intensely red and edematous for an area of about 5 cm. in diameter, and covered with minute vesicles. The powder was removed with sterile water, and the area was covered with a bandage for 48 hours. On removal, he showed, at the site of the wet application, one impetiginous crust about 1 cm. in diameter. The

Positive patch test to a phenylhydrazine compound, showing an impetiginous reaction.

area of the dry application showed twelve 0.5 cm. similar crusts. Culture of the powder showed no bacterial growth.

His skin healed rapidly, but he was so scared of again contacting this powder that he refused to return to his former place of employment and is now doing a different type of work.

Summary: A report of a case of dermatitis from a phenylhydrazine compound is given. The value of using a powder in its dry form in patch testing is emphasized. An impetiginous type of reaction was noted in patch testing.

REFERENCES

1. Von Oettingen, W. F., and Deichmann-Gruebler, W.: On the relation between the chemical constitution and pharmacological action of phenylhydrazine derivatives. J. Indust. Hyg. & Toxicol. **18**:1 (Jan.) 1936.
2. Hueper, W. C.: Pathological studies on the organic effects of various hydrazine derivatives. J. Indust. Hyg. & Toxicol. **18**:17 (Jan.) 1936.

MEDICAL PROGRESS

PROGRESS IN THE STUDY OF CARDIOVASCULAR DISEASE IN 1935

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INTRODUCTION

DISEASE of the cardiovascular system holds an important place in the modern practice of medicine, as is illustrated by the large number of contributions to the literature on this subject made during the year, 1935. The observations by those engaged in laboratory and clinical research have been so numerous that it is impossible in this limited review to comment on each one; therefore, it has been necessary to select papers representative of particular fields of investigation. It has been this persistent attack year after year on the minor as well as on the major problems that has enabled us to amass a knowledge of the cardiovascular system sufficient to permit as great or even greater progress in this branch of medicine as compared with that in any other during the last two decades.

The search for the cause of rheumatic heart disease has been carried on in many laboratories and clinics with varied results. Knowledge of the etiology of this disease so prevalent in our

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Northeastern states would be a tremendous step forward in gaining control of it. Coronary heart disease has also received considerable attention, especially with the help of the electrocardiograph in detecting the disease earlier and in localizing the areas of damage more accurately.

Several books of interest have been published in the year, 1935. Harrison has published a book entitled, "Failure of the Circulation," which in reality is a record of the studies of congestive failure made by him and his associates during the last few years. Many theories based on physiologic experiments are presented to aid in a more complete understanding of many of the symptoms associated with congestive failure.

Cowan and Ritchie have presented a book of practical value, "Diseases of the Heart." The first fifty-six pages have been devoted to the anatomy, physiology and pathology of the heart.

Stieglitz has written a book entitled, "Abnormal Arterial Tension," which is similar to a previous work in 1930. In it he deals with the problems of hypertension and hypotension. He outlines theories concerning the cause of the condition and also discusses treatment. "Living Along with Heart Disease" is a small book written by Levin to give laymen a better knowledge of heart disease. It is so written that patients with heart trouble may derive certain comfort from a better understanding of their condition. The chance of doing harm by this procedure is small.

From the mortality statistics of the United States Bureau of the Census, Dauer has made some interesting observations on the geographic distribution of deaths due to heart disease. The Northeastern states have the highest mortality rate in the older age groups, and the Atlantic coast states from Maryland to Massachusetts have the highest rate in the younger age groups. Syphilis has a higher incidence among the Negroes of the Southern states than among the Whites, which fact probably accounts for a higher cardiac mortality in the former group.

ANATOMY

Orthopnea and right hydrothorax in cardiac failure have been explained by Dock in an interesting theory based on hydrostatic pressure differences due to the anatomic relation of the left ventricle and the pulmonary circulation. In the recumbent position, blood returning from the lungs must be raised 4 to 7 cm. against gravity before it enters the left ventricle. When the person is upright, however, the blood descends with gravity to the left ventricle, intrapulmonary pressure is reduced, and the tendency to dyspnea is diminished. When the patient is on his right side, as many cardiac patients prefer to be, the pulmonary venous outflow from the right lung must be raised 10 cm. to reach the left ventricle, whereas, it is raised only 5 cm. from the left lung in the left lateral position.

PHYSIOLOGY

Hitzig and his associates have shown, in isolated cases of failure of the left ventricle, that the circulation time from arm to tongue was prolonged, although the arm to lung circulation time was normal. This would indicate that the delay in the former results from a slowing of the pulmonary circulation. The circulation time can be shortened by full digitalization in cases of left ventricular failure with normal rhythm.

Robertson and Fetter have found that the venous and spinal fluid pressures were elevated in right heart failure and that both fell after venesection. These pressures were not correlated in failure of the left ventricle. There was no interrelation of the arterial blood pressure and the spinal or venous pressure in either right or left cardiac insufficiency.

Following his animal experiments on dogs, Shambaugh has concluded that a rise in blood pressure does not necessarily follow mechanical constriction of the coronary vessels. Pain is associated with sudden elevations in blood pressure in the presence of slight coronary constriction.

Tennant and Wiggers have developed an experimental technic with which they can record localized contractions of the heart. They have obtained normal myograms and compared them with myograms made after ligation of either coronary artery. The myogram is completely inverted during this condition but, on removal of the ligature, it returns to normal, providing the period of ischemia was not too long.

PATHOLOGY

Leary has presented three cases illustrating sudden death in the absence of coronary thrombosis. In one of these cases the coronary arteries were normal, and slight atherosclerosis was present in the other two cases. It was suggested that spasm of the coronary vessels with resultant anoxemia of the myocardium was the most likely cause of death.

Baker has stated that endocardial tuberculosis is seen not infrequently at autopsy, usually in association with a generalized miliary process. It is thought to come directly from the blood within the heart chambers, although caseous nodules within the myocardium may impinge onto the endocardial surface. The line of closure of the valves is rarely affected, so that deformity and insufficiency are lacking. Thrombotic vegetations do not occur on the valves in tuberculosis.

ETIOLOGY

Congenital. Muir and Brown have described several types of cardiac abnormalities encoun-

tered in a study of 212 patients with congenital heart disease, of whom 25 were examined post mortem. The patients were divided into two groups, with or without cyanosis. The latter group was discussed in detail with regard to coarctation of the aorta, subaortic stenosis, patent ductus arteriosus and interventricular septal defect.

Levine has reported a case of congenital heart block probably associated with an interventricular septal defect. Both the auricular and ventricular rates increased after exercise, during fever and after the injection of atropine or adrenalin. Ocular pressure slowed the rate. The variation of the cardiac rate in children with congenital heart block is well recognized in the literature.

Rheumatic Heart Disease. Kutumbiah has reported 50 cases of juvenile rheumatism illustrating that rheumatic fever in the tropics is not uncommon and that it closely resembles such cases occurring in temperate climates. McIntosh and Wood have reviewed 24 cases of rheumatic infection, which began before the patients were 3 years of age and which occurred in a 25 year period. The symptomatology and clinical picture are those of a general infection, but the outstanding feature is cardiac damage, 96 per cent having either clinical or pathological evidence of rheumatic heart disease.

Davis and Weiss have reported on a large series of cases with rheumatic heart disease. About 50 per cent of the patients lived from 6 to 25 years after the first clinical manifestations of rheumatic fever, and 50 per cent died within 1 year of the onset of cardiac failure. A large series of cases with rheumatic heart disease have been reviewed by DeGraff and Lingg. When the infection occurred before the age of 10 years, it was found that a greater number of patients had more than one valve affected, than was the case when the infection occurred after the first decade. The valve affected did not seem to alter the duration of life, except in the case of the pulmonic and tricuspid valves, when it was made slightly less favorable. On the whole, valvular disease gives but little information to prognosis.

DeGraff and Lingg have concluded from their study of 644 cases of rheumatic heart disease that auricular fibrillation usually sets in during the late stages of the disease. It is the condition of the heart and not the presence of auricular fibrillation that determines the expectancy of life. The age at which the disease is acquired is not associated with the age of onset of auricular fibrillation.

The presence of hemolytic streptococci in the pharyngeal flora influencing rheumatic activity is discounted by Wilson and her associates. Between 1930 and 1932, a group of 222 rheumatic subjects had 783 respiratory infections and 401 rheumatic recurrences but less than 10 per cent of the latter were preceded within 3 weeks by a respiratory infection. Of 123 rheumatic subjects, 98 per cent had 649 respiratory attacks in a year, over half of which were associated with hemolytic streptococci. Eighty-four per cent of the respiratory infections were not associated with rheumatic activity.

Schlesinger and his associates have reported some very interesting observations on the etiology of rheumatic fever. They believe a virus is the causative agent. This virus has been obtained by centrifugating pericardial and pleural exudates resulting from acute rheumatic processes. Suspensions of these bodies have been agglutinated by the serums of patients suffering from an acute rheumatic infection. The serums of normal persons and of those patients who were quiescent failed to agglutinate the suspension of bodies. The streptococcus is believed to be a primary factor in the etiology of rheumatic fever; it lowers the individual's resistance, enabling the virus to enter the body and become active.

In a series of three papers Coburn and Pauli have described a method of determining the antistreptolysin titers of human beings, and have recorded their observations of a group of isolated children with heart disease that suffered an epidemic of influenza and secondary hemolytic streptococcus infections. The natural antistreptolysin in normal children was found to be about 50 units. In the isolated group of children the epidemic of influenza did not activate the rheumatic process. However, 17 children were shown subsequently to have a single type of hemolytic streptococcus infection and, of these, 14 developed acute rheumatism with a rise in antistreptolysin titer. Seven children failed to contract infection with the streptococcus and remained in good health without a rise in antistreptolysin titer.

Bland and Jones have given a single intravenous injection of typhoid-paratyphoid vaccine to several rheumatic subjects. They observed recurrences or recrudescences of rheumatic fever similar to those occurring after respiratory and other forms of infection. They feel that it is advisable to consider such events that precede exacerbations of acute rheumatic activity as being nonspecific until more definite evidence of the etiologic factors can be demonstrated.

Subacute Bacterial Endocarditis. In a search for the source of entry of *Streptococcus viridans* in cases of subacute bacterial endocarditis, Okell and Elliott have made important bacteriologic studies of the mouth and blood stream. After tooth extraction in patients with septic mouths a transient bacteremia lasting a few minutes was found in 75 per cent of the cases, and in 34 per cent when the mouths showed no obvious gum disease. About 11 per cent of patients

with septic mouths had a streptococcal bacteremia without operative procedures having taken place.

Segal has found only 3 cases of auricular fibrillation and 2 cases of auricular flutter in 192 cases of acute and subacute bacterial endocarditis.

Angina Pectoris. Proger, Minnich and Magendantz exercised patients with angina pectoris on a stationary bicycle. They observed the following four types of response by the patients during exercise: (1) failure of the heart rate to increase normally; (2) development of extrasystoles just prior to the appearance of pain, which disappeared on cessation of exercise; (3) a thready pulse with failure of the pulse pressure to increase normally on cessation of exercise; and (4) respiratory distress with a rapid pulse rate characteristic of cardiac weakness. Atropine permitted a faster pulse rate in group 1 but had no effect on the capacity to work without pain. The use of quinidine sulfate abolished the extrasystoles and permitted a greater capacity for work. An interesting experiment was made on 2 patients. Reduction of weight by diet therapy lowered the basal metabolic rate in 1 patient but did not affect the other. The former patient was not able to do more work, despite the lower metabolic rate. It was suggested that some factor other than lowered metabolism alone was responsible for the improvement seen in patients with angina pectoris following total thyroidectomy.

Wedd and Smith have studied 166 cases of angina pectoris of which one half died of coronary occlusion. One third of the patients died suddenly. The average duration of life after the onset of angina pectoris was 5.8 years. The electrocardiograph did not aid in giving a prognosis.

Coronary Disease and Coronary Thrombosis. Nuzum and his associates found clinical evidence of coronary sclerosis in 44.5 per cent of 155 unselected hypertensive patients. Of 65 hypertensive cases examined at necropsy, the clinical diagnosis of coronary sclerosis was confirmed in 97 per cent of the cases, and sclerosed coronary vessels were found in 67 per cent of the remainder where it was unsuspected.

Saphir and his co-workers have made an extensive study of coronary artery disease. Thirty-four cases showing involvement of both coronary arteries were selected by the pathologist. After the anatomic study, the associated clinical records were reviewed. It was noted that the most severe lesions were in the left coronary artery, and that whenever a myocardial infarct was found at least two of the branches supplying the area were involved. Death occurred because of myocardial failure in the majority of patients, and in no case did sudden death follow occlusion of a single main branch. Failure of the electrocardiogram to give evidence of coronary thrombosis or myocardial infarction was encountered in a few cases. Locating the position of the infarcts by the standard three leads was not reliable. Pain referable to the heart was observed in 18 of the 34 patients, even though coronary thrombosis was found in 32. Coronary sclerosis was the only consistent finding in the cases of angina pectoris. Pericarditis was noted in 9, although a friction rub was heard in only 4 cases; in 2 of these the infarct was in the posterior ventricular wall.

A new method of treatment for patients suffering with coronary heart disease has been suggested and is now in the process of development. From his experimental work on dogs Robertson has concluded that a considerable amount of myocardial nutrition is possible through the vascularity of pericardial adhesions.

Beck and Tichy have reported their ingenious work in producing a collateral blood supply for the heart through pericardial adhesions. One hundred and sixty-five operations were performed on 103 dogs. The surface of the heart was incised or irritated, and the pericardium was sutured over the scarified area. It was found that when the pressure was low in the coronary arteries, new vessels would grow into the myocardium from the adhesions. In other words, when an area of myocardial infarction is present due to diminished coronary supply, new vessels grow into the myocardium from the pericardial adhesions and supply the area with blood. Various experiments in obliterating the coronary arteries of the dogs showed that the animals did much better if a collateral blood supply was first provided.

As a result of their successful animal experiments, Moritz and Beck have studied the coronary situation of man to determine whether their theories might be applicable. Of 94 patients with occlusion of a major coronary artery, 14 died suddenly but 36 died after a second coronary accident. It is suggested that this latter group might have been benefited by a collateral circulation from a vascular bed of pericardial adhesions created after the first coronary attack in order to be present when the second occurred.

Cardiovascular Syphilis. In 14,000 autopsies at the Johns Hopkins Hospital, Norris has found only 2 cases suggestive of congenital syphilitic aortitis. One was a 9 year old girl and the other a 17 year old boy. The possibility of sudden death in young people with syphilitic aortitis and involvement of the coronary ostia is emphasized.

Maynard and his associates have obtained several interesting facts from their analysis of 346 cases of syphilis, 145 of which showed cardiovascular involvement. Fourteen adults with

congenital syphilis showed no signs of cardiac involvement. Evidence of cardiovascular syphilis appeared, on the average, 20 years after the initial infection, although in 3 patients it was found within 3 years of the chancre. Heart failure was found only in cases of aortic insufficiency, aneurysm or involvement of a coronary artery. It is the opinion of the authors that syphilitic aortitis is not a late manifestation of the disease, but that it starts soon after the chancre has been discovered.

Padget and Moore have studied the effect of antisyphilitic treatment in 161 patients with cardiovascular syphilis. About one third of the patients died within a year, and it was thought that they were unamenable to therapy. A second third were considered as being inadequately treated; and the final third were believed to be adequately treated. Seventy of the patients died, and the average duration of life for the adequately treated cases was 1.47 times as great as that of the group of inadequately treated cases. Deaths due to cardiovascular syphilis were 1.91 times higher in the poorly treated patients with aneurysm than in the adequately treated patients, and 1.37 times higher in the patients with aortic insufficiency. These statistics closely follow those obtained by Grant in a similar study in 1933.

Thyroid Heart Disease. Rose, Wood and Margolies have found abnormalities in the electrocardiograms of patients with toxic or nontoxic goiter. Change in axis deviation after operation and large P waves and T waves that may be inverted were the variations noted.

Pulmonary Heart Disease. McGinn and White have directed attention to the similarity of the clinical pictures in acute coronary thrombosis and in pulmonary embolism. The latter condition has suggested the name of acute cor pulmonale because of the sudden distention of the right heart chambers following occlusion of the pulmonary artery. Nine case reports have been presented to demonstrate cases of acute cor pulmonale that looked exactly like cases of coronary thrombosis. Symptoms and consistent electrocardiographic changes have been presented in an effort to distinguish between the two conditions.

In a series of five papers Brenner has reported his studies of the pathologic changes in the vessels of the pulmonary circulation. In his foreword he states that, despite the great importance of the pulmonary circulation, we know very little about it. He hopes that his pathologicoanatomic observations may be of value in the more complete understanding of the pathologic physiology of the pulmonary circulation.

Miscellaneous. Porter and Bloom have concluded from their studies of 30 patients with typhoid fever that the heart presents no real problem in that disease. It was suggested that possibly the present mode of treatment with a high caloric diet has eliminated some of the cardiac complications. The most important electrocardiographic change, which proved to be temporary, was prolongation of the P-R interval.

Faulkner and his associates have found 11 abnormal electrocardiograms taken during or following the acute infection of 171 cases of scarlet fever. A follow-up study of 600 cases of scarlet fever was made from 1 to 3 years after the acute infection. Seven patients had developed heart disease that clinically resembled rheumatic heart disease.

Spink has called attention to the acute myocarditis sometimes found in trichinosis and thought to be due to the presence of larvae in the myocardium. In one third of 18 cases with trichinosis electrocardiographic changes were noted, which consisted of flattening or inversion of the T waves, especially in lead II, but which eventually became upright. Low amplitude of the ventricular complexes and intraventricular block were also observed.

Chronic constrictive pericarditis was the subject chosen by White for his St. Cyres Lecture of the National Hospital for Diseases of the Heart in London. The abstracts of 15 cases are presented, the literature is reviewed, and the clinical condition with regard to diagnosis is discussed. It is a very complete description of chronic adhesive pericarditis.

Burwell and Flickinger have reported a case of obstructing pericarditis due to concretio cordis, which followed a staphylococcus infection. It was noted that the venous pressure was increased and that the cardiac output was diminished. After removal of part of the constricting pericardium, the cardiac output increased, and the venous pressure fell.

An extensive study of nonpenetrating wounds of the heart, including a review of 168 cases from the literature, has been made by Bright and Beck. Injury to the heart was inflicted in these cases by direct blows over the sternum, by crushing injuries to the chest and by lacerations from fractured ribs or sternums. Only 12 cases survived, while 96.8 per cent died of cardiac rupture. From experimental studies, the presumption was made that most cases with contusion of the heart recover and that only the very severe ones die and are reported in the literature. Following a chest injury, symptoms, such as dyspnea, irregular pulse, angina and electrocardiographic evidence of infarction, should make one consider trauma of the myocardium. Treatment consists in avoiding myocardial failure and rupture of the heart by prescribing morphine and rest. Digitalis is used for irregular heart action, and tapping the peri-

cardium is necessary for an effusion. If intrapericardial pressure should suddenly increase, suggesting cardiac rupture, an immediate operation to suture the wound is essential.

SYMPTOMS AND SIGNS

Lissner and his associates have made the diagnosis of adolescent heart in 9 per cent of children examined in the clinic. The ages ranged from 9 to 16 years. The presenting symptoms were those of palpitation, fatigue, dyspnea, pain, vertigo and sweating. Systolic murmurs were heard in 106 of 254 patients, most of which disappeared in a few years. Organic heart disease was ruled out by x-ray, electrocardiographic and physical examinations. It was concluded that many functional disturbances arise during the period of physiologic changes associated with adolescence.

Bramwell has emphasized the prognostic significance of gallop rhythm. Once this sign is noted very few patients live for more than 2 years. Auricular contraction, tachycardia and a failing dilated heart are essential to the production of gallop rhythm.

In a study of 100 young patients who showed evidence of rheumatic heart disease at autopsy Bland, White and Jones have concluded that it requires about 2 years for the development of extensive valvular deformity. The presence of a mitral diastolic murmur during active rheumatic fever does not necessarily mean mitral stenosis and is probably produced by myocardial weakness and ventricular dilatation.

Ferris, Capps and Weiss have reported 32 additional patients that complained of attacks of dizziness, weakness and unconsciousness, and in whom similar attacks could be precipitated by mechanical stimulation of the carotid sinus. Both spontaneous and induced attacks apparently depend upon the hyperactivity of the carotid sinus reflex. Digitalis was found to sensitize both the carotid sinus vagal and carotid sinus cerebral reflexes. Surgical denervation of the carotid sinus has eliminated spontaneous attacks in 7 cases.

Two of the clinical features not uncommon in cases of aortic stenosis, namely, sudden death and syncope, have been emphasized and discussed by Marvin and Sullivan. Of 11 patients with aortic stenosis, 9 died very suddenly. Four of these patients did not have congestive failure at the time of death. Five of the 11 patients suffered from attacks of unconsciousness. It was suggested that sudden death and periods of loss of consciousness in patients with aortic stenosis may be associated with hyperactivity of the carotid sinus reflex.

Boas has pointed out the frequency with which angina pectoris and auriculoventricular conduction disturbances are associated with calcareous aortic stenosis. The former is probably due to impairment of the coronary blood supply by the calcific process, and the latter to extension of the process into the conducting tissue.

Ninety-one cases of permanent and 28 cases of transient auricular fibrillation have been analyzed by Brown, all of which had postmortem examinations and were exclusive of cases of rheumatic heart disease. Hypertension appeared as an etiologic factor in 79.3 per cent of the former and 86.5 per cent of the latter cases. Coronary disease was not common as a single factor causing permanent auricular fibrillation. There were 15 cases without evidence of heart disease, although 5 did have hyperthyroidism. It is stated that coronary sclerosis is not always associated with peripheral sclerosis, and that the term "arteriosclerotic heart disease" should not be applied or at least should be modified.

Clements has presented a case of tricuspid stenosis, which was indistinguishable clinically from mitral stenosis. The liver did not pulsate, and the neck veins were not distended. Except for slight mitral regurgitation it was the only valve lesion present.

X-RAY

Orthodiagraphic measurements obtained by Nuzum and Elliot have shown a correlation of the cardiothoracic ratio and the body weight in persons with or without potential cardiac enlargement. Thin persons tended to have transverse cardiac diameters less than half the internal diameter of the chest, and obese patients had greater cardiac diameters. It was thought that in obesity the left ventricular enlargement failed to manifest itself because of mechanical reasons. Failure to demonstrate cardiac enlargement was noted in 20.2 per cent of 79 patients that presumably had cardiac hypertrophy.

The importance of differentiating by x-ray aneurysms of the aorta and tumors of the mediastinum has been stressed by Warfield.

An increase in the cardiac area was found in 26 per cent of cases with uncomplicated hyperthyroidism by Margolies, Rose and Wood. Following thyroidectomy the heart returned to normal size in uncomplicated cases. In fluoroscopic examination the pulmonary artery in hyperthyroidism is often found to be prominent and to pulsate vigorously.

ELECTROCARDIOGRAPHY

Sprague and Orgain have reviewed the autopsied cases of coronary occlusion that had had electrocardiograms made a short time before death in the Massachusetts General Hospital between 1914 and 1934. They found 61 cases suitable for their study. It was noted that 437 cases of coronary thrombosis had been diagnosed clinically in the same period. They found

very few instances of death following the closure of a single coronary artery. When the myocardial infarct was limited to the apex and anterior wall of the left ventricle, localization of the area by the electrocardiogram was correct in 70 per cent, but when the infarcted area was posterior and in the right ventricle it was correct in only 30 per cent. Low voltage and intraventricular block were found in the tracings of patients having old and fresh occlusions of the coronary arteries. These findings interfered with efforts to localize the area of infarction.

Inversion of the T waves in leads II and III has been observed by Graybiel and White in patients without evidence of organic heart disease, the usual cause for such inversion. The conditions in which these changes were found were neurocirculatory asthenia, thyrotoxicosis, infections and paroxysmal ventricular tachycardia. One of the latter cases had inversion of the T wave in lead I. Subsequent examinations after clinical improvement showed that the T waves in lead II were upright. The need of caution in diagnosing serious heart disease, when an inverted T wave in lead II is the only abnormal finding, is emphasized.

Rykert and Hepburn have directed attention to the inverted T waves in lead I and other characteristics of the electrocardiograms from many patients with hypertension. These changes are associated with left axis deviation and are not necessarily indicative of coronary occlusion.

Schwab and Herrmann have reviewed the literature and have presented 7 cases of pericardial disease illustrating the similarity of the high "take-off" of the S-T segment in cases of acute coronary occlusion and pericardial effusion. They have also noted inversion of the T waves following reabsorption of the pericardial fluid and disappearance of the high "take-off".

Salcedo-Salgar and White have determined the relative incidences of auriculoventricular and intraventricular block in coronary disease. In 700 cases of angina pectoris without clinical coronary thrombosis 8.8 per cent showed heart block and in 328 cases of coronary thrombosis 13.1 per cent. Of 117 patients with auriculoventricular block, 21.3 per cent showed evidence of coronary disease. Of 181 patients with intraventricular block, 46.9 per cent showed evidence of coronary disease, although only 9.3 per cent had frank evidence of thrombosis, the others having angina pectoris. The prognosis of the older cases of auriculoventricular and intraventricular block was equally unfavorable whether or not angina pectoris or coronary thrombosis was present.

Faulkner has reported a very interesting electrocardiographic study made on a man 56 years of age. The P-R interval was exceedingly long and measured 0.80 second, sometimes exceeding the R-R interval.

Experimental studies on dogs and monkeys by Foster have shown that rotation of the heart definitely alters the electrocardiogram in cases of bundle branch block. Although the changes are toward the indeterminate type, careful observation, he believes, will enable one to classify them as right or left bundle branch block.

Wood, Jeffers and Wolferth have studied 64 patients with electrocardiographic evidence of right bundle branch block. Twenty patients showed no other signs of heart disease, and 13 had only minor evidences. All of the 33 cases have done well when it is considered that three quarters of them were over 50 years of age. The patients with definite heart disease followed the course one would expect with such a disorder and were apparently uninfluenced by the bundle branch block. Emphasis is directed to the conclusion that right bundle branch block is more common than we have thought and that its presence does not necessarily signify serious heart disease.

Roth has reviewed and commented on the literature concerning chest leads in electrocardiography. The discussion is critical of "an unwarranted enthusiasm on the subject". He believes there is a tendency to overemphasize the chest leads on the one hand, and to underrate abnormalities of the standard leads on the other. Suggestions are made regarding nomenclature and standard locations for the application of the chest electrode.

Levy and Bruenn have found changes in lead IV of the electrocardiograph, which they believe denote activity of the rheumatic infection in the myocardium. The changes that they consider abnormal in lead IV are an upright T wave, a T wave inverted more than 9 mm., notched Q-R-S complexes, and R-T segments coming off above or below the isoelectric line. Successive electrocardiograms were made, and the abnormalities in the fourth lead frequently helped to evaluate minor variations in the three conventional leads.

Strauss and Katz have observed changes in the S-T intervals and T waves in lead IV subsequent to digitalis therapy. They resemble the changes seen in coronary disease and are, therefore, confusing.

That left axis deviation is not, necessarily, evidence of left ventricular hypertrophy is again emphasized, this time by Katz, Saphir and Strauss. They have reported 3 unusual cases of brown atrophy of the heart, none of which had left ventricular hypertrophy despite the fact that electrocardiograms showed various degrees of left axis deviation.

PHARMACOLOGY

Bryan, Evans, Fulton and Stead have observed that the specific gravity, total nitrogen and the colloid osmotic pressure of the plasma remained unchanged from a time prior to the injection of salyrgan into edematous dogs up to the time of diuresis. These values were all increased during diuresis and represent a concentration of the blood. Their experiments indicate that the primary action of the mercurial diuretic, salyrgan, is directly on the kidneys and that the withdrawal of fluid from the tissues into the blood stream is secondary.

Arnold, Middleton and Chen have recorded their observations of the use of thevetin in the treatment of 23 patients with cardiac failure. Thevetin has been isolated from be-still nuts and has a digitalis-like action, being about one-seventh as strong as ouabain. It slows the heart rate, restores compensation, produces diuresis and alters the electrocardiogram as digitalis does. Irritation to the tissues prohibits the use of thevetin intramuscularly; its efficacy by oral administration has not been determined, and gastric reactions are troublesome; therefore, at least at present, thevetin is best used intravenously to obtain a more prompt but less sustained action than that of digitalis.

Cohn and Lewis have reviewed 1,456 cases of lobar pneumonia to note what effect digitalis has on the course of the disease. It appears to be beneficial when auricular flutter or fibrillation is present.

Experimental studies have been reported by Meeker, Kesten and Jobling which show that potassium iodide, fed in large doses to rabbits with atherosclerosis created by cholesterol feeding, has no influence on the involution of the vascular lesions.

TREATMENT

Blumgart and his associates have reviewed their experiences in treating 36 patients suffering from various forms of arteriosclerotic heart disease by total ablation of the thyroid gland. Thirty-one of these patients had angina pectoris, 20 of whom were benefited by the operation. The results in this type of heart disease have been sufficiently good to warrant further operations. Better choice of operative cases may improve the results. It is believed that total ablation of the thyroid gland is contraindicated in the presence of a low metabolic rate, renal impairment, chronic pulmonary infection or intractable edema.

Levine and Eppinger have given a second report on their experiences with total thyroidectomy in chronic heart disease. The new series includes 30 patients, 23 with angina pectoris and 7 with congestive heart failure. Nineteen of the anginal patients are alive an average of 6 months after operation. Improvement was "excellent" in 8, "good" in 6, "moderately good" in 4, and "fair" in 1. Two of the remaining cases were surgical fatalities, and 2 died of acute coronary thrombosis. Of the 7 cases of congestive failure the results were "excellent" in 3, "good" in 2, and "fair" in 1. It is suggested that the beneficial results, in addition to lowering the metabolic rate, may be caused by a diminution of the sensitivity of the heart to adrenin.

REFERENCES

Arnold, H. L.; Middleton, W. S., and Chen, K. K.: The action of thevetin, cardiac glucosid, and its clinical application. Am. J. M. Sc. **189**:193 (Feb.) 1935.

Baker, R. D.: Endocardial tuberculosis. Arch. Path. **19**:611 (May) 1935.

Beck, C. S., and Tichy, V. L.: The production of collateral circulation to the heart; experimental study. Am. Heart J. **10**:849 (Oct.) 1935.

Bland, E. F., and Jones, T. D.: Clinical observations on the events preceding the appearance of rheumatic fever. J. Clin. Investigation **14**:633 (Sept.) 1935.

Bland, E. F.; White, P. D., and Jones, T. D.: The development of mitral stenosis in young people, with a discussion of the frequent misinterpretation of middiastolic murmur at the cardiac apex. Am. Heart J. **10**:995 (Dec.) 1935.

Blumgart, H. L.; Riseman, J. E. F.; Davis, D., and Weinstein, A. A.: Treatment of angina pectoris and congestive failure by total ablation of the normal thyroid: results in arteriosclerotic heart disease. Am. Heart J. **10**:596 (June) 1935.

Boas, E. P.: Angina pectoris and heart block as symptoms of calcareous aortic stenosis. Am. J. M. Sc. **190**:376 (Sept.) 1935.

Bramwell, C.: Gallop rhythm. Quart. J. Med. **4**:149 (April) 1935.

Brenner, O.: Pathology of the vessels of the pulmonary circulation. Arch. Int. Med. **56**:211 (Aug.); 457 (Sept.); 724 (Oct.); 976 (Nov.); 1189 (Dec.) 1935.

Bright, E. F., and Beck, C. S.: Nonpenetrating wounds of the heart; clinical and experimental study. Am. Heart J. **10**:293 (Feb.) 1935.

Brown, M. G.: The relationship of coronary arteriosclerosis to auricular fibrillation with special reference to the term "arteriosclerotic heart disease". New Eng. J. Med. **212**:963 (May 23) 1935.

Bryan, A. H.; Evans, W. A., Jr.; Fulton, M. N., and Stead, E. A.: Diuresis following the administration of salyrgan: its effect on specific gravity, total nitrogen and colloid osmotic pressure of plasma of normal and of edematous dogs. Arch. Int. Med. **55**:735 (May) 1935.

Burwell, C. S., and Flickinger, D.: Obstructing pericarditis; effect of resection of the pericardium on the circulation of a patient with concretio cordis. Arch. Int. Med. **56**:250 (Aug.) 1925.

Clements, A. B.: Isolated tricuspid stenosis of probable rheumatic origin. Am. J. M. Sc. **190**:389 (Sept.) 1935.

Coburn, A. F., and Pauli, R. H.: Studies on the immune response of the rheumatic subject and its relationship to activity of the rheumatic process; determination of antistreptolysin titer. J. Exper. Med. **62**:129 (Aug.) 1935.

Coburn, A. F., and Pauli, R. H.: Studies on the immune response of the rheumatic subject and its relationship to activity of the rheumatic process; observations on an epidemic of influenza followed by hemolytic streptococcus infections in a rheumatic colony. J. Exper. Med. **62**:137 (Aug.) 1935.

Coburn, A. F., and Pauli, R. H.: Studies on the immune response of the rheumatic subject and its relationship to activity of the rheumatic process; observations on the reactions of a rheumatic group to an epidemic infection with hemolytic streptococcus of a single type. J. Exper. Med. **62**:159 (Aug.) 1935.

Cohn, A. E., and Lewis, W. H., Jr.: Lobar pneumonia and digitalis. Am. J. M. Sc. **189**:457 (April) 1935.

Cowan, John, and Ritchie, W. T.: Diseases of the Heart. London: Edward Arnold and Co., 1935.

Dauer, C. C.: Mortality rates of organic diseases of the heart by geographical areas in the United States. Am. Heart J. **10**:955 (Oct.) 1935.

Davis, D., and Weiss, S.: Rheumatic heart disease; life history of the severe form of the disease. Am. Heart J. **10**:486 (April) 1935.

DeGraff, A. C., and Lingg, C.: The course of rheumatic heart disease in adults; factors pertaining to age at initial infection, development of cardiac insufficiency, duration of life and cause of death. Am. Heart J. **10**:459 (April) 1935.

DeGraff, A. C., and Lingg, C.: The course of rheumatic heart disease in adults; influence of auricular fibrillation on the course of rheumatic heart disease. Am. Heart J. **10**:630 (June) 1935.

Dock, W.: The anatomical and hydrostatic basis of orthopnea and of right hydrothorax in cardiac failure. Am. Heart J. **10**:1047 (Dec.) 1935.

Faulkner, J. M.: An extraordinary degree of partial heart-block; report of a case in which the P-R interval exceeded the R-R interval. Am. Heart J. **10**:969 (Oct.) 1935.

Faulkner, J. M.; Place, E. H., and Ohler, W. R.: The effect of scarlet fever upon the heart. Am. J. M. Sc. **189**:352 (March) 1935

Ferris, E. B., Jr.; Capps, R. B., and Weiss, S.: Carotid sinus syncope and its bearing on the mechanism of the unconscious state and convulsions; study of 32 additional cases. Medicine **14**:377 (Dec.) 1935.

Foster, P. C.: The relation of the position of the heart to the initial ventricular deflections in experimental bundle-branch block. Am. Heart J. **10**:1042 (Dec.) 1935.

Graybiel, A., and White, P. D.: Inversion of the T wave in lead I or II of the electrocardiogram in young individuals with neurocirculatory asthenia, with thyrotoxicosis, in relation to certain infections, and following paroxysmal ventricular tachycardia. Am. Heart J. **10**:345 (Feb.) 1935.

Harrison, Tinsley R.: Failure of the Circulation. Baltimore: Williams and Wilkins Co., 1935.

Hitzig, W. M.; King, F. H., and Fishberg, A. M.: Circulation time in failure of the left side of the heart. Arch. Int. Med. **55**:112 (Jan.) 1935.

Katz, L. N.; Saphir, O., and Strauss, H.: The electrocardiogram in brown atrophy of the heart. Am. Heart J. **10**:542 (April) 1935.

Kutumbiah, P.: Clinical study of rheumatism in childhood. Indian J. Pediat. **2**:215 (July) 1935.

Leary, T.: Coronary spasm as a possible factor in producing sudden death. Am. Heart J. **10**:338 (Feb.) 1935.

Levin, Louis: Living Along with Heart Disease. New York: The Macmillan Company, 1935.

Levine, H. D.: A case of congenital complete heart block with labile ventricular rate. Am. Heart J. **10**:376 (Feb.) 1935.

Levine, S. A., and Eppinger, E. C.: Further experiences with total thyroidectomy in the treatment of intractable heart disease. Am. Heart J. **10**:736 (Aug.) 1935.

Levy, R. L., and Bruenn, H. G.: The precordial lead of the electrocardiogram (lead IV) as an aid in the recognition of active carditis in rheumatic fever. Am. Heart J. **10**:881 (Oct.) 1935.

Lissner, H. H.; Goffin, J. L. C., and Rosenfield, W. H.: The adolescent heart. Am. J. Dis. Child. **49**:353 (Feb.) 1935.

McGinn, S., and White, P. D.: Acute cor pulmonale resulting from pulmonary embolism; its clinical recognition. J. A. M. A. **104**:1473 (April 27) 1935.

McIntosh, R., and Wood, C. L.: Rheumatic infections occurring in the first three years of life. Am. J. Dis. Child. **49**:835 (April) 1935.

Margolies, A.; Rose, E., and Wood, F. C.: Heart in thyroid disease: the effect of thyroidectomy on the orthodiagram. J. Clin. Investigation **14**:483 (July) 1935.

Marvin, H. M., and Sullivan, A. G.: Clinical observations upon syncope and sudden death in relation to aortic stenosis. Am. Heart J. **10**:705 (Aug.) 1935.

Maynard, E. P., Jr.; Curran, J. A.; Rosen, I. T.; Williamson, C. G., and Lingg, C.: Cardiovascular syphilis; early diagnosis and clinical course of aortitis in 346 cases of syphilis. Arch. Int. Med. **55**:873 (June) 1935.

Meeker, D. R.; Kesten, H. D., and Jobling, J. W.: Effect of iodine on cholesterol-induced atherosclerosis. Arch. Path. **20**:337 (Sept.) 1935.

Moritz, A. R., and Beck, C. S.: The production of a collateral circulation to the heart; pathological anatomical study. Am. Heart J. **10**:874 (Oct.) 1935.

Muir, D. C., and Brown, J. W.: Congenital heart disease. Brit. M. J. **1**:966 (May 11) 1935.

Norris, R. F.: Syphilitic aortitis in childhood and youth; report of 2 cases with sudden death. Bull. Johns Hopkins Hosp. **57**:206 (Oct.) 1935.

Nuzum, F. R., and Elliot, A. H.: Transverse diameter of the heart in patients with hypertension, with clinical measurements checked by postmortem studies. Arch. Int. Med. **55**:293 (Feb.) 1935.

Nuzum, F. R.; Elliot, A. H., and Evans, R. D.: Clinical and pathological study of coronary sclerosis: its incidence in hypertension and angina pectoris. Am. Heart J. **10**:367 (Feb.) 1935.

Okell, C. C., and Elliott, S. D.: Bacteriaemia and oral sepsis with special reference to the aetiology of subacute endocarditis. Lancet **2**:869 (Oct. 19) 1935.

Padget, P., and Moore, J. E.: The results of treatment in cardiovascular syphilis; report of 3 years' additional observation. Am. Heart J. **10**:1017 (Dec.) 1935.

Porter, W. B., and Bloom, N.: The heart in typhoid fever; clinical study of 30 patients. Am. Heart J. **10**:793 (Aug.) 1935.

Proger, S. H.; Minnich, W. R., and Magendantz, H.: The circulatory response to exercise in patients with angina pectoris. Am. Heart J. **10**:511 (April) 1935.

Robertson, H. F.: The reestablishment of cardiac circulation during progressive coronary occlusion; experimental study on dogs. Am. Heart J. **10**:533 (April) 1935.

Robertson, H. F., and Fetter, F.: The effect of venesection on arterial, spinal fluid, and venous pressures with especial reference to failure of the left and right heart. J. Clin. Investigation **14**:305 (May) 1935.

Rose, E.; Wood, F. C., and Margolies, A.: The heart in thyroid disease; effect of thyroidectomy on electrocardiogram. J. Clin. Investigation **14**:497 (July) 1935.

Roth, I. R.: On the use of chest leads in clinical electrocardiography. Am. Heart J. **10**:798 (Aug.) 1935.

Rykert, H. E., and Hepburn, J.: Electrocardiographic abnormalities characteristic of certain cases of arterial hypertension. Am. Heart J. **10**:942 (Oct.) 1935.

Salcedo-Salgar, J., and White, P. D.: The relationship of heart-block, auriculoventricular and intraventricular, to clinical manifestations of coronary disease, angina pectoris, and coronary thrombosis. Am. Heart J. **10**:1067 (Dec.) 1935.

Saphir, O.; Priest, W. S.; Hamburger, W. W., and Katz, L. N.: Coronary arteriosclerosis, coronary thrombosis, and the resulting myocardial changes; evaluation of their respective clinical pictures including electrocardiographic records, based on anatomical findings. Am. Heart J. **10**:567 (June); and 762 (Aug.) 1935.

Schlesinger, B.; Signy, A. G.; Amies, C. R., and Barnard, J. E.: Aetiology of acute rheumatism; experimental evidence of virus as causal agent. Lancet **1**:1145 (May 18) 1935.

Schwab, E. H., and Herrmann, G.: Alterations of the electrocardiogram in diseases of the pericardium. Arch. Int. Med. **55**:917 (June) 1935.

Segal, M. S.: Auricular fibrillation and auricular flutter in the course of subacute bacterial endocarditis; report of a series of cases. New Eng. J. Med. **212**:1077 (June 6) 1935.

Shambaugh, P.: Circulatory changes in angina pectoris; experimental study. Arch. Int. Med. **56**:59 (July) 1935.

Spink, W. W.: Cardiovascular complications of trichinosis. Arch. Int. Med. **56**:238 (Aug.) 1935.

Sprague, H. B., and Orgain, E. S.: Electrocardiographic study of cases of coronary occlusion proved at autopsy at the Massachusetts General Hospital, 1914-1934. New Eng. J. Med. **212**:903 (May 16) 1935.

Stieglitz, E. J.: Abnormal Arterial Tension. New York: National Medical Book Co., 1935.

Strauss, H., and Katz, L. N.: Effect of digitalis on the appearance of lead IV. Am. Heart J. **10**:546 (April) 1935.

Tennant, R., and Wiggers, C. J.: The effect of coronary occlusion on myocardial contraction. Am. J. Physiol. **112**:351 (June) 1935.

Warfield, C. H.: Roentgen diagnosis of aneurysms of the innominate artery. Am. J. Roentgenol. **33**:350 (March) 1935.

Wedd, A. M., and Smith, R. E.: Observations on prognosis in angina pectoris. Am. J. M. Sc. **189**:690 (May) 1935.

White, P. D.: Chronic constrictive pericarditis (Pick's disease) treated by pericardial resection. St. Cyres Lecture. Lancet **2**:539 (Sept. 7); 597 (Sept. 14) 1935.

Wilson, M. G.; Ingerman, E.; DuBois, R. O., and Spock, B. M.: The relation of upper respiratory infections to rheumatic fever in children; significance of hemolytic streptococci in pharyngeal flora during respiratory infection. J. Clin. Investigation **14**:325 (May) 1935.

Wood, F. C.; Jeffers, W. A., and Wolferth, C. C.: Follow-up study of 64 patients with a right bundle-branch conduction defect. Am. Heart J. **10**:1056 (Dec.) 1935.

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CASE RECORDS
of the
MASSACHUSETTS GENERAL HOSPITAL

ANTEMORTEM AND POSTMORTEM RECORDS AS USED IN WEEKLY CLINICOPATHOLOGICAL EXERCISES

FOUNDED BY RICHARD C. CABOT, M.D.

TRACY B. MALLORY, M.D., *Editor*

CASE 23061

PRESENTATION OF CASE

A 70 year old American housewife entered complaining of jaundice.

The patient had been comparatively well until 3½ weeks before entry, when she first noticed marked constipation and itching of the skin. Prior to this time her bowel movements had always been regular. Several days after the onset of her illness her skin became yellow and her stools clay-colored. At the same time the urine became very dark in color. She took several doses of Epsom salts, which relieved her constipation, but the jaundice persisted and increased. She had gaseous eructations, but no abdominal pain at any time. She was frequently nauseated and occasionally vomited colorless fluid. A week before entry an x-ray examination of the abdomen was done, and she was told that the gall bladder contained a large stone. She took frequent doses of bile salts, following which her stools became brown in color. Currently there was persistent and severe pruritus.

Thirty years before entry the patient had pneumonia. Fifteen years before entry an appendectomy was performed for acute appendicitis.

Physical examination showed a well-developed, moderately obese, intensely jaundiced woman in no acute discomfort. The lungs were clear. The heart was normal. The liver edge was palpable 3 centimeters beneath the right costal margin, and what was thought to be a large tender gall bladder was palpated, although no details were noted. The remainder of the examination was negative.

The temperature was 98°F., the pulse 60. The respirations were 20.

Examination of the urine showed a specific gravity of 1.014, with a trace of albumin and a large amount of bile. The sediment contained 2 white blood cells and a rare red blood cell. The coagulation time was 12 minutes. The sedimentation rate was 50 millimeters in 1 hour. The clot retraction was normal.

Two days after entry a laparotomy was performed. The liver was found to be exceedingly hard and very much enlarged. The gall bladder was surrounded by adhesions and was contracted down upon several stones and a mass surrounding its ampulla. This mass extended downward around the common duct. The latter was exposed and found to be free from bile. No mass could be felt in the pancreas, and there was no evidence of metastasis in the liver. There was thickening about the hepatic duct just above the cystic duct. Since there was no bile in the common duct or in the gall bladder, it was decided not to drain the common duct, and the abdomen was closed. Following operation her temperature rose occasionally as high as 100°F., but her general condition remained relatively unchanged for several weeks. She became progressively weaker, her jaundice deepened, she lapsed into stupor and died, on the fortieth hospital day.

DIFFERENTIAL DIAGNOSIS

DR. BETH VINCENT: I will confess that the frankness with which we are given the operative findings in this case makes me a bit suspicious. Apparently an easy diagnosis is not to be expected.

We have to deal with a 70 year old woman, who complains of intense jaundice. That immediately focuses our attention on the liver and the bile ducts. Jaundice of this degree may be hemolytic, intrahepatic, or obstructive. Hemolytic jaundice can be excluded in this case because there is no mention of a large spleen, because the stools were clay-colored and because the urine was heavily loaded with bile. If there is a primary lesion outside of the liver or the common duct, it is not indicated by the information that we are given. To be sure, she was constipated, which, in a woman of her age, may indicate a tumor of the intestine with metastases in the liver. But the constipation yielded to catharsis, and there is no mention of the stools containing blood. So we may conclude, even without the operative findings, that the lesion in this case involved the common duct or the liver. It might be an intrahepatic lesion, such as we find in severe cases of toxic or catarrhal jaundice or in subacute yellow atrophy of the liver. We know that the liver in this case is enlarged, and in yellow atrophy, of course, the liver is small except in the early stages of the disease. Cirrhosis is highly improbable with this intense grade of jaundice. It seems to me that the jaundice is obstructive. In the first place, the stools were always clay-colored except at one observation. The patient took frequent doses of bile salts. I confess that I do not know the reason for the use of bile salts in this condition. After that the stools became brown. If she had taken large doses of oxgall, we might expect discoloration of the stools, even with complete obstructive jaundice.

If she had obstructive jaundice, what are the most likely lesions? She could have stricture in the common duct. There might be a stone in the common duct since we know that the x-ray had demonstrated stones in the gall bladder. She could have malignant disease. Malignant disease at this site and at her age most commonly includes that of the head of the pancreas, and carcinoma of the gall bladder, which may extend and involve the common duct, or the tumor may be primary in the duct itself. The fact that she had had no pain is rather in favor of obstruction from malignant disease and against obstruction from stone, although the stone may have been a silent one. The surgeon found at operation that the liver was exceedingly hard and very much enlarged. With obstructing jaundice you would expect the liver to be very much enlarged, but not hard. If hard, you would think of malignant disease. It says later, however, that there were no metastases in the liver. The gall bladder, as was to be expected, contained stones and was contracted down upon a mass surrounding the ampulla. The mass extended downward around the common duct. I think we should conclude that this mass was malignant and had extended to or pressed upon the common duct. The surgeon went further and exposed and opened the common duct. I doubt if he could get in above. There was no bile in the common duct. He probed the papilla, examined the pancreas and found no malignancy there. At least 70 per cent of the cases of malignant disease of the gall bladder and common duct occur in association with stones. The apparent diagnosis in this case is malignant obstruction of the common duct due to tumor originating in the gall bladder.

DR. ARTHUR W. ALLEN: Would it be fair to ask whether there was bile in the hepatic ducts above the cystic duct. They were not explored at the operation?

DR. TRACY B. MALLORY: No. The common bile duct below the tumor mass was opened and found to contain no bile.

DR. ALLEN: No biopsy was obtained from the wall of the gall bladder? The stones were not removed?

DR. MALLORY: No.

DR. BENJAMIN CASTLEMAN: The gall bladder was needled and no bile found in it. It was hard, and they thought it was filled with stones. They could feel no fluid.

CLINICAL DIAGNOSES

Carcinoma of the gall bladder.
Cholelithiasis.
Bronchopneumonia.

DR. BETH VINCENT'S DIAGNOSIS

Carcinoma of the gall bladder.

ANATOMIC DIAGNOSES

Cholelithiasis.
Stricture of the common bile duct.
Hydrohepatosis.
Cirrhosis, biliary.
Jaundice.
Hemorrhage into the gastrointestinal tract and the kidneys.
Arteriosclerosis, marked aortic.
Bronchopneumonia.
Pleuritis, chronic fibrous.
Operative scars: appendectomy and exploratory laparotomy.

PATHOLOGICAL DISCUSSION

DR. MALLORY: Dr. Vincent has made the natural and reasonable diagnosis and the one that the surgeon who operated on the patient also felt perfectly confident about. The postmortem examination, however, fails to bear it out. We found that just at the junction of the common bile duct with the cystic duct there was an area that was somewhat thickened on external palpation but not so hard as, in our opinion, it would have been if it had been malignant. On incising that area we found a definite stricture. Above the area of stricture the hepatic duct was enormously dilated and the dilatation continued up both major branches and throughout all the smaller branches in the liver. As soon as the stricture was incised a large amount, perhaps 200 cubic centimeters, of dark, reddish-green fluid welled out immediately, as if it were under great tension. The condition in the liver from the gross point of view is what is described as a hydrohepatosis of very marked degree. Microscopically, as is characteristic, the minute bile ducts are not dilated, but show a marked degree of proliferation and are surrounded by definite fibrosis, so that one would have to call it a well-marked biliary cirrhosis. Finally, as is so often the case in prolonged obstructive jaundice, there is a very marked secondary degeneration of the liver tissue in the form of extensive central necrosis; so that without much question an element of liver insufficiency played a role in the patient's death. It would probably be fair to estimate that not over a quarter of the liver tissue was still capable of function. The stricture was so high that I do not believe it would have been possible to do an anastomosis. Since the mouth of the cystic duct was included in the inflammatory mass, they could not have used the gall bladder, but would have had to try to anastomose the hepatic duct to the duodenum, which I do not believe would have been technically possible. How do you feel about that, Dr. Vincent?

DR. VINCENT: It would have been very difficult to relieve this patient by operation.

DR. MALLORY: It was not apparent why there

should be a localized stricture. It may have been an ascending cholangitis. There was evidence of infection throughout all of the common bile duct below the obstruction, but the stricture was very localized. The gall bladder with its mass of hard stones appeared to press on the ducts and added a mechanical factor.

A PHYSICIAN: Was the mass inflammatory?

DR. MALLORY: Entirely inflammatory.

DR. CASTLEMAN: I think the mass that the surgeon felt was that of the stones in the neck of the gall bladder in addition to the area of inflammation around it.

DR. MALLORY: The great majority of these strictures of the common duct that we see are either associated with a stone in the duct or with a previous surgical operation. We probably see three postoperative ones for every one such as this, which is apparently primary.

DR. ALLEN: The inflammatory reaction that is supposed to produce this nonoperative stricture may start in two or three ways. Usually it is started by a stone that rests for a long time within the duct, producing ulceration, so that the lining of the duct becomes scarred and, as time goes on, a real cicatricial contraction takes place. Fibrosis with stricture may take place by inflammation around the duct. There have been instances described where it was thought that there was no erosion of the inside of the duct. I would assume that in this instance we were dealing with a constricting cholangitis from inflammation around, rather than within, the duct.

DR. MALLORY: There was no evidence of ulceration of the lumen of the duct at the time of autopsy.

CASE 23062

PRESENTATION OF CASE

A 37 year old engineer was admitted complaining of swelling and pain in the sacroiliac region.

Six months before entry the patient noted pus in his urine, and about 10 days later he had attacks of chills, fever and rather acute pain and tenderness in the left groin. These symptoms were associated with urinary frequency and malaise. The frequency gradually diminished, however, but there was persistent nocturia.

Four months before admission he noticed dull aching pain in the region of the left hip, which made walking difficult. There was a sensation of swelling in the left buttock, and the skin was hyperesthetic. These symptoms gradually subsided, but a month later recurred with increased severity, and walking became very difficult. Again there was subsidence, but 6 weeks before coming to the hospital it recurred and, at that time, definite swelling was felt in the region of the left sacroiliac joint. The swelling gradually increased, so that the left buttock and lateral aspect of the upper thigh became much larger than the right. The symptoms persisted and the patient entered a hospital 2 weeks before his entry here. The pain was located at various intervals in the buttock, the hip and the back of the left leg and heel.

Thirteen years before entry the patient was struck in the groin by an automobile and dragged on his back for several feet. The only immediate effect was swelling of the penis, which soon subsided. Following this accident the patient noted difficulty in stopping the urinary stream.

Physical examination showed a well-developed and nourished young man lying comfortably in bed but moving cautiously because of pain in the left hip. The reflexes were all within normal limits. There was slight tenderness in the left lower quadrant of the abdomen. Increased superficial warmth was noticed over the left sacroiliac region, where there was a tender indurated swelling. There was no tenderness in the right sacroiliac or lumbosacral regions, or over the course of the left sciatic nerve. There was slight atrophy of the left gluteal muscles. The hip muscles exhibited a normal range, but there was pain upon hyperextension of the left hip. Compression of the pelvis caused no discomfort. The remainder of the examination was negative. The temperature was 99°F., the pulse 80. The respirations were 20.

Examination of the urine showed a specific gravity of 1.010 to 1.028. There was a slight trace of albumin. The sediment contained an occasional red blood cell and rare to many white blood cells. There were rare hyaline casts. The blood showed a red cell count of 4,950,000, with a hemoglobin of 80 per cent. The white cell count was 6,600, 55 per cent polymorphonuclears, 33 lymphocytes, 9 monocytes, 2 eosinophils and 1 basophils. A blood Hinton test was negative. Culture from the right kidney was negative. Culture from the left kidney showed *Bacillus coli*. Prostatic massage showed between 100 and 150 white blood cells per low power field in the expressed excretion. No organisms were noted.

X-ray examination of the pelvis showed an irregular area of bone destruction in the central portion of the left sacroiliac joint. The margins of the defect were irregular and ragged, and the process was entirely destructive in nature. There was no evidence of new bone formation or reaction in the surrounding bone. The psoas muscles were symmetrical, but there was some increased density in the soft tissues surrounding the left sacroiliac joint. Films of the spine and skull were negative. A chest film showed clear lung fields. The diaphragm and heart shadow were not remarkable. A plain

film of the abdomen showed that both kidneys were normal in size, shape and position. A retrograde pyelogram was negative.

Cystoscopic examination of the bladder showed considerable reddening of the trigone, extending up to the ureteral orifices. The remainder of the bladder was slightly reddened but otherwise normal. The ureteral orifices were not remarkable. Catheters passed readily into both kidneys.

An intracutaneous injection of tuberculin in a dilution of 1:10,000 gave a positive reaction in 24 hours. During the succeeding week the patient's condition remained unchanged. The temperature occasionally rose to 99°F. but did not go beyond that point. On the sixth hospital day an exploration was performed.

Differential Diagnosis

Dr. Joseph S. Barr: Pain in the sacroiliac region is a common complaint, but swelling is quite unusual and warrants further consideration.

These symptoms of pain in the sacroiliac region, the radiation of the pain down the left posterior lateral calf and into the heel, which is usually spoken of as sciatic pain, simply means to me that there was irritation of the lumbosacroiliac plexus, producing radiation of pain over the area supplied by the sciatic nerve. The swelling, of course, draws our attention to the possibility of one of two things, neoplasm or infection. There is no note made about the question of fluctuation.

One other thing that might have given some information is a rectal examination. In patients with low back pain of sciatic radiation, rectal examination should never be omitted because it may give evidence that is very useful, particularly in a patient, such as this, who had swelling about his buttock and trochanter. Since he was for a time under the care of a urologist, I think we may assume that a rectal examination was done and was negative.

The only remark that I have to make about the kidney symptoms is that I presume there has been infection in the left kidney. One procedure that may have been done, but is not recorded, is a guinea-pig inoculation of the urine.

Dr. Richard Chute: That was done but has not been reported yet.

Dr. Barr: Whether this history of urinary infection has anything to do with his other symptoms is not clear so far, at least in my mind.

This x-ray film will serve to show the lesion as well as the pyelogram. You can see the punched-out area of destruction in the left sacroiliac region, as was noted, without evidence of new bone formation or other reaction.

"The psoas muscles were symmetrical, but there was some increased density in the soft tissues surrounding the left sacroiliac joint." That is important to know. It rules out psoas abscess. The clinical examination showing complete hyperextension of the hip also checks this point.

In the differential diagnosis I think we have only two major possibilities, neoplasm and infection. Let us briefly consider neoplasm. The history is not very characteristic. He has had three separate remissions and exacerbations, and with neoplasm we expect to find definitely increasing symptoms with perhaps more pain than this patient has shown. If the neoplasm is large enough to cause radiation of pain, we would expect the pain to be progressive in severity, whereas it apparently has not increased very much. There are some neoplastic diseases that occur generalized over the body, such as Hodgkin's disease, lymphoma and myeloma. We have no evidence of any lesion in other places. Hypernephroma is apparently fairly well ruled out, although it is still a possibility; but, in general, the history and examination are certainly not very characteristic of neoplasm, and hypernephroma would not explain the swelling of his buttock and posterior sacroiliac region, except by extension into the soft tissues.

Let us consider infection. Patients with a pyogenic lesion in this area are usually gravely ill, whereas here there is a normal white count and a practically normal temperature, so that a pyogenic infection is quite unlikely. The diagnosis that best explains to me his symptoms and physical examination is tuberculosis of the sacroiliac joint. We have a purely destructive lesion of the joint with swelling. These patients usually have abscess formation, or at least granulation tissue about it, and the duration is usually 4 months at least. This process has been going on long enough to permit a considerable amount of destruction, although ordinarily with tuberculosis of only 4 months' duration we would scarcely expect to find so large a lesion. The temperature is consistent with this diagnosis. The white count is consistent. There is another favorable factor, the monocyte-lymphocyte ratio. There were 9 monocytes and 33 lymphocytes in the differential count, which makes the ratio somewhere between 1:3 and 1:4. I believe that the men who are studying the cell count and its relation to infection believe that such a ratio —elevation of the monocyte count—may mean active tuberculous infection. Sciatic radiation of pain is common in tuberculosis of the sacroiliac joint, and it is one of the added bits of evidence that influences a good many men to feel that sacroiliac lesions are an adequate cause for sciatic radiation of pain. The pain over the

sciatic distribution and in the buttock may not be due to the lesion in the joint, but rather to nerve irritation from the granulation outside the joint. As to whether the patient has kidney disease, I think we will have to wait until the guinea pig is autopsied for confirmation. My diagnosis is tuberculosis of the left sacroiliac joint and possibly tuberculosis of the left urinary tract.

X-ray Interpretation

Dr. Aubrey O. Hampton: I know the answer to this case and I do not know that I can add to what Dr. Barr has already said. I remember the discussion was as to whether this was tuberculosis, and from the type of the lesion and its location I do not see how one can differentiate tuberculosis and a destructive lesion, such as tumor. We did not see the changes in the lower portions of the joint margins that we have seen in some cases of tuberculosis. We did not see the soft tissue abscess that we would expect to be present but that we rarely see in cases of tuberculosis of the sacroiliac joint. Dr. Smith-Petersen's cases of tuberculosis in the sacroiliac joint were reviewed by Dr. Holmes. He does not know the diagnosis in this case and perhaps he would like to make a differential diagnosis. What do you think this is, Dr. Holmes?

Dr. George W. Holmes: When I reviewed this group of cases a year or so ago, I was very much surprised to find that we had not had a proved case of tuberculosis of the sacroiliac joint in this hospital. I had to go to the Peabody Home for films of a proved case. The impression I got from the whole thing was that, in the first place, sacroiliac tuberculosis is a much more uncommon condition than I had supposed, and, secondly, that it occurs more often in adults than in children and is almost invariably accompanied by a lesion somewhere else. It is not as a rule primary. The lesson that the roentgenologist should get is that a diagnosis of sacroiliac tuberculosis should never be made on the x-ray findings alone. In this case, therefore, I would hesitate to say that the lesion was due to tuberculosis.

Dr. Barr: That is negative evidence, Dr. Holmes. What is the positive evidence? If it is not tuberculosis, what is your diagnosis?

Dr. Holmes: I would not make a diagnosis. The best I could do would be to say that there is a definite variation from the normal that could be caused by a tumor or by a low-grade inflammatory reaction.

Dr. Barr: I forgot to mention that giant cell tumor is one of the neoplastic diseases that should be considered.

Dr. Robert B. Osgood: Do you attach any importance to the fact that the outlines of the sacroiliac joint on one side are very different from the outlines on the other side?

Dr. Barr: Yes. I looked at the x-rays carefully this morning for the first time. There is a definite difference in the outlines. The lesion has increased in size between the various examinations and, as you have pointed out, there are changes along the left joint. I do not know what they mean, but I know that they occur in tuberculosis of the sacroiliac joint.

Dr. Osgood: Some time ago in a review of proved cases of tuberculosis with changes in the joint we found that this increased density on one side was the most reliable sign of tuberculosis of the joint.

Dr. Tracy B. Mallory: Have you anything to add, Dr. Chute?

Dr. Chute: I see the world through a cystoscope, of course; and the interesting thing to me in this case is that this man had a chronic left pyelitis with *Bacillus coli* infection. This infection went along unabated in spite of intensive treatment with methenamine, but completely disappeared after a course of mandelic acid, our most recent urinary antiseptic.

The guinea pig inoculations have not been reported, but I do not believe they will be positive.

Dr. Edwin F. Cave: There are two points that should have been included in the physical examination—the mass did not fluctuate, and the rectal examination was negative.

I operated on this man and explored the mass. Our preoperative diagnosis was tuberculosis, and I was greatly surprised to find no sign of an abscess. The lesion was primarily in the ilium. It had invaded the joint but had not involved the sacrum. We did not find any pus. There was a great deal of edema of the tissues about the joint. Dr. Castleman was called to the operating room and did a frozen section on which he reported a diagnosis of lymphoma. Since that time the patient has been receiving x-ray treatment and has improved, although he still has some referred pain. He now has an absent knee jerk on the involved side, which he did not have previously. The ankle jerks are both present and equal. His back motions are very good. He came in today for a treatment, and Dr. Hampton found a gland in the right axilla. We thought that the x-rays taken today showed increased bone formation.

Preoperative Diagnosis

Tuberculosis of the left sacroiliac joint.

Dr. Joseph S. Barr's Diagnosis

Tuberculosis of the sacroiliac joint.

Pathological Diagnosis

Lymphoblastoma of the ilium, probably Hodgkin's type.

Pathological Discussion

Dr. Mallory: Of the various forms of lymphoma that can be primary in bone, by all odds the two most frequent are Hodgkin's disease and reticulum cell sarcoma. Sometimes on microscopic examination the two are hard to differentiate, and that was the case here. I can imagine a difference of opinion among pathologists if they were presented with this slide. Personally, as I looked at it this morning, it seemed more characteristic of Hodgkin's disease than of reticulum cell sarcoma. There were a good many multinuclear cells and occasional eosinophils. There is nothing that tuberculosis can do in the spine that Hodgkin's disease cannot do on occasion, although it is, of course, a far rarer lesion. Hodgkin's disease is also a good explanation of an increased monocyte ratio in the blood. We are not at the stage yet, however, where we can rule out the possibility of tuberculosis elsewhere in this man.

Dr. Barr: It had been my impression that, according to the work that Dr. Hunter has done, cases of Hodgkin's disease showing bone lesions usually had Hodgkin's elsewhere and that, if the diagnosis had been made, the bone lesions were of secondary importance. Is that true?

Dr. Mallory: I do not think that holds. We have seen a number of cases where the bone lesion was the primary indication of Hodgkin's disease.

The New England
Journal of Medicine

SUCCESSOR TO
THE BOSTON MEDICAL AND SURGICAL JOURNAL

Established in 1828

Published by THE MASSACHUSETTS MEDICAL SOCIETY under the jurisdiction of the

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SUBSCRIPTION TERMS: *$6.00 per year in advance, postage paid for the United States, Canada $7.04 per year, $8.52 per year for all foreign countries belonging to the Postal Union.*

Material for early publication should be received not later than noon on Saturday. Orders for reprints must be sent to the Journal office, 8 Fenway.

The Journal does not hold itself responsible for statements made by any contributor.

Communications should be addressed to The New England Journal of Medicine, 8 Fenway, Boston, Mass.

MATTHEW VASSAR PIERCE
GENERAL PRACTITIONER

TODAY it is customary to measure the degree of success attained by any individual in terms of acclamation by the multitudes. Newspaper headlines, prizes of various kinds, membership in learned societies, and fulsome obituaries momentarily concentrate the public regard upon the hero of the hour only to have his name sink into oblivion and his memory forgotten in a few short years. In our own profession this fundamental human desire for public adulation has led us to a point where the specialist, the scientist, or the teacher, particularly if he be facile with his pen, is looked upon as the ultimate authority in all things medical. He is the recipient of the temporal awards mentioned above and thinking himself honored above all men is, shortly, only that individual whose work has since been superseded and proved wrong by the newest superscholar now residing in our midst. This makes for necessary progress but not necessarily for fame. We all know that we strive after such goals and we all know that, having attained our ends, the rewards are as dust and ashes in our mouths, but it takes the death of a man whose character and life represented the very antithesis of these qualities to remind us that humility is the true essence of fame and that the truly lasting rewards are the intangible ones.

Dr. Matthew Vassar Pierce made his home and carried on a general practice in Milton, a community on the outskirts of Boston, for fifty-five years. He carried comfort, skilled care, unfailing kindness, sympathy and understanding to practically every member of the town at one time or another. He visited the sick of every age, creed, color or social position at every hour of the day or night. He inspired the building of and headed the local hospital. He worked continuously and untiringly for the betterment of his community. His "third generation patients" were innumerable; there were local families whose fourth generation had grown up under his care and even some whose fifth generation members were among his patients. He worked hard—much harder than we of this age have any conception of. To the writer's knowledge his name never appeared in the newspapers, he wrote no scientific articles, his medical societies were purely local, he was awarded no prizes and no university ever granted him an honorary degree—yet—at their golden wedding anniversary he and Mrs. Pierce were greeted by practically every inhabitant of Milton from the Chinese laundryman to the wealthiest landowner in the community and at his death there was scarcely a man, woman or child that did not feel the loss of a valued friend.

This man was a general practitioner. His study of mankind *was* man and he actually did practice the art in preference to the science of medicine. His modesty was sincere and he was "humble of heart". His reward he found in the love bestowed on him in gratitude for his kindness by rich and poor alike. In Milton his memory and name will live forever.

AND THE WATERS PREVAILED UPON THE EARTH

SINCE those days, many centuries before the accuracy of written records had succeeded the dramatic recital of legendary events, when some great inundation had inspired the story of a voyage that began a new civilization upon the slopes of Ararat, man has been overawed by the magnitude of calamity that follows the loosing of the waters upon the world. When the rains descended and rivers no longer recognized their banks; when the fertile soil receded as the un-

desired tide advanced, then the dwellers in the valley appreciated, sometimes too late, the substantial advantages of a permanent foothold on the good earth.

The valley of the Nile is one thing, where the periodically anticipated submergence of the desert guarantees its agricultural usefulness; the valley of the Yangtze presents another picture, when, owing to centuries of denudation of the watersheds, an unwonted flood season converts this vast area into a sullen inland sea.

Even with Nature untroubled by man's efforts to ameliorate his lot, unusual conditions of unremitting rains or quickly melting snows will tax the capacity of rivers to their utmost, and they cannot remain confined within their normal banks. River bottoms are caused by floods and are made for floods, and their inhabitation is always a gesture of defiance, like the inhabitation of volcanic slopes. The more tragic of these devastations, however, are the result of man's tampering with the orderly sequence of natural phenomena; stripping the watersheds of their normal water-holding attributes, and then trying to prevent the water from seeking its own level in the way that Nature had ordained.

It was the bursting of a dam under flood conditions that sent Victor Heiser down the Conemaugh Valley on the crest of the wave, trying to keep himself on that surface of his father's barn which, at the moment, happened to be out of water; it was the logging and agricultural enterprises of the past two centuries that allowed New England's suddenly dissolved snows of a year ago to be poured into her inadequate river beds almost overnight. We would have had floods at best, but if our hills and valleys had still been covered with deeply rooted forests the release of this exuberance of water would have been the more gradual.

A calamity of hitherto unknown magnitude, although of easily predictable character, has descended upon the valleys of the Ohio and Mississippi rivers. Flood records, unfortunately, are still in the making; new ones are being established this year, but they will be surpassed in the future. Towns and cities have grown up along the river banks, and the fertile lowlands have been given over to agriculture. Artificial banks can contain the river only to a certain limit, and then comes calamity.

Among the most important of the problems of such a disaster is its effect on public health. Respiratory diseases are spread by exposure and close contact under unfavorable conditions of living; the menace of enteric infections is inconceivable when a mighty, polluted river breaks its bounds, finds its way into sewage systems and water supplies alike, breaking down the safeguards of modern sanitary engineering in a region where typhoid fever is already endemic.

The middle West will recover from this scourge, but if man is to retain his status of a rational being, adequate and considered flood control measures must be put into effect before the next disaster is due. The resources of a continent can be exploited only to a definite limit before neutralizing factors are put into effect, or else repeated disasters are certain to be encountered.

THIS WEEK'S ISSUE

CONTAINS articles by the following named authors:

BROWN, LLOYD T. M.D. Harvard Medical School, 1907. F.A.C.S. Instructor in Orthopedic Surgery, Harvard Medical School. Orthopedic Surgeon, Faulkner Hospital; Boston Home for Incurables, and Children's Island Sanitarium. President of the Board of Directors, Robert B. Brigham Hospital. Address: 372 Marlborough Street, Boston, Mass. His subject is "Pelvic Inclination: A Factor in Slipped Epiphysis and Nonunion of Fracture of the Hip." Page 233.

O'HARA, DWIGHT. M.D. Harvard Medical School, 1919. Professor of Preventive Medicine, Tufts College Medical School. Junior Visiting Physician, Boston City Hospital. Address: 5 Bay State Road, Boston, Mass. His subject is "Preventive Inoculations." Page 236.

DOWNING, J. G. M.D. Harvard Medical School, 1915. Assistant Professor of Dermatology, Tufts College Medical School. Dermatologist, Beth Israel and St. Elizabeth's Hospitals. Assistant Dermatologist, Boston City Hospital. Consultant Dermatologist, United States Public Health Service. Address: 520 Commonwealth Avenue, Boston, Mass. His subject is "Dermatitis from Phenylhydrazine Compounds. Report of a Case." Page 240.

MCGINN, SYLVESTER. M.D. Harvard Medical School, 1929. Assistant in Medicine, Massachusetts General Hospital. Member of Staff, St. Elizabeth's Hospital. Cardiac Consultant, Sturdy Memorial Hospital, Attleboro. Address: 270 Commonwealth Avenue, Boston, Mass. His subject is "Progress in the Study of Cardiovascular Disease in 1935." Page 241.

The Massachusetts Medical Society

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Case Histories

No. 6. MISSED ABORTION

Mrs. L. MacC. M., a white woman, 27 years old, was seen at home on December 9, 1928. She had had a small amount of bright bleeding the night before, and when seen there was no bleeding at all. Her last period was July 10, so that she should have been approximately 4 months pregnant.

There was no family history of tuberculosis, diabetes, malignancy or hemorrhagic disease. She had had whooping cough and measles as a child. Her periods had begun at 13 years, were regular, of the 28-day interval, and lasted 4 days. They were accompanied by no pain. This was her second pregnancy, the first one terminating normally in September, 1925.

On physical examination she was a well-developed woman, weighing 107 pounds. Her heart and lungs were normal. Her teeth were well cared for. The mucous membranes were of good color. Her lungs were normal and resonant throughout, with no rales. Her blood pressure was 112/60. Her pulse was 68. Her abdomen was negative save for a tumor in the mid-line just palpable above the symphysis. The extremities were normal. There were no palpable glands. The breasts were not firm. No enlargement of Montgomery's glands was present.

A blood Wassermann was negative. A blood matching showed that the patient's blood was incompatible with that of her husband. Repeated urinalyses were all normal.

Mrs. M. had been seen at three previous visits in the office, the first time on October 8. At each examination the growth of the uterus was found to be consistent with the duration of amenorrhea.

On December 9, following the bleeding, vaginal examination showed that the uterus was distinctly smaller than it had been on the previous visit at the office, November 20. It was enlarged to a size of not more than 8 to 10 weeks rather than 3½ months plus. The decrease in the size of the uterus, the retrogression in the physical aspects of the breasts and nipples and the slight amount of bleeding led to a diagnosis of missed abortion or blighted ovum.

Mrs. M. was kept in bed for a week, during which time she did not flow. Vaginal examination on December 14 showed that the uterus had shrunk even more, so that it was no larger than a 6 to 8 weeks' pregnancy. The situation was discussed with both the patient and her husband. It was pointed out that a blighted ovum of this sort might be carried indefinitely; on the other hand, it might be passed spontaneously at any time. Conservative treatment demanded a curettage for the purpose first, of removing the blighted ovum, secondly, of reestablishing the menses and, thirdly, of avoiding the possibility of carrying the ovum indefinitely.

On December 15 the uterus was curetted, and a large amount of almost fibrous decidua was removed. There was no abnormal bleeding attendant upon this operation. There was no evidence of a fetus. The pathological report was as follows: "Specimen consists of a rather large amount of curettings in which are the fetal membranes and placenta. Sections reveal microscopically the presence of numerous chorionic villi and decidual cells characteristic of pregnancy. Diagnosis: Pregnancy."

Mrs. M. made a perfectly normal convalescence, remaining in the hospital a week. Since this unfortunate accident, she has had another pregnancy which went to term; she was delivered normally of a child weighing 7 pounds, 11 ounces, on June 2, 1930.

The diagnosis of a case of blighted ovum is made on retrogression in the enlargement of Montgomery's glands, the disappearance of firmness of the breasts, the actual shrinkage in size of the uterus, and the absence of a positive Aschheim-Zondek test after this has been positive.

*A series of selected case histories by members of the Section will be published weekly.

Comments and questions by subscribers are solicited and will be discussed by members of the Section.

MISCELLANY

WHAT MASSACHUSETTS IS DOING FOR THE CRIPPLED CHILD*

The Social Security Act, passed by the 74th Congress in August, 1935, has received a great deal of publicity, particularly in respect to its provisions for old age benefits and unemployment compensation. Most people do not know that in addition to those features the Social Security Act, for the first time in our national history, takes a step in the direction of improving and protecting the public health. Of about $15,000,000 thus appropriated for various purposes, the sum of $2,850,000 was set aside to enable each state to extend and improve its existing services for the medical and surgical care of crippled children.

The medical and surgical care of the crippled child is not at all a new idea in Massachusetts. Practicing physicians who specialize in orthopedic

*A Health Message Broadcast given by Edward G. Huber, M.D., on Thursday, January 28, 1937, and sponsored by the Public Education Committee of the Massachusetts Medical Society and the Massachusetts Department of Public Health.

surgery have, for years, freely given their time and skill to the care of the unfortunate, handicapped individuals of any age. To do this they have established clinics wherever they could. The Commonwealth has maintained the Lakeville State Sanatorium for the treatment of extrapulmonary tuberculosis, chiefly tuberculosis of the bones and joints.

The federal government recognized the work done at Lakeville for crippled children and, without requiring the State to appropriate any additional money to match the federal funds, granted the aid authorized by the Social Security Act. This sum is only $85,000 per year for the entire State. The annual value of the aid given crippled children in Massachusetts before the federal grant was far in excess of $85,000. It is, therefore, obvious that the federal grant could not possibly supplant existing services and that it must be used solely to improve and extend them. The new funds must be used only for individuals not reached by previous efforts.

The Commissioner of Public Health, in whose hands the administration of service for crippled children was placed, at once recognized the fact that the medical and surgical care of crippled children, being a curative and not a preventive problem, is a new program in the public health field, and that it, of necessity, closely concerns the medical profession. Accordingly, the problem was discussed with large and small groups of members of the Massachusetts Medical Society in all the eighteen constituent districts of the State, before any moves were made toward the establishment of clinics. Some slight opposition was encountered among the ultraconservative and among those who feared an encroachment by the State into the field of local clinics. When the Council of the Massachusetts Medical Society unanimously endorsed the plan and approved the methods taken by the Department of Public Health in endeavoring to secure the cooperation of the members of the Society, it was felt that sufficient preparations had been made for the establishment of Clinics for Crippled Children, on the principle that the Department of Public Health would administer the program for the Massachusetts Medical Society.

It was decided to define a crippled child as including those children under 21 years of age who are suffering from poliomyelitis, bone and joint tuberculosis, congenital defects, arthritis, and other similar conditions that may lead to or have produced crippling, and that may be treated advantageously. It is planned to include children who require plastic operations following burns and accidents or with congenital defects, such as harelip, cleft palate, and so forth. It is not planned to include the care of children who are the victims of "acute" accidents, or who require operations for hernia or for the removal of tonsils and adenoids, nor is it planned to provide custodial care for children of low mentality.

On September 2, 1936, the first clinic was held at Pittsfield. There are now eleven such clinics, each one held monthly on a published schedule. They are state-wide — three in the western counties, Pittsfield, Greenfield and Springfield; two in the central part of the State, Worcester and Gardner; three in the northeastern area, Haverhill, Lowell and Salem; and three in the southeastern part, Fall River, Hyannis and Brockton. In keeping with the spirit of the Social Security grant, that aid is primarily for those in the rural areas, there is no Clinic for Crippled Children in the Metropolitan area. To be sure, some of the clinics *are* held in large cities, but this is only because clinics must be held where the hospitals have adequate orthopedic facilities. For example, although Worcester is a clinic center, the patients seen at that clinic are from the surrounding rural districts only. The excellent orthopedic surgeons in the City of Worcester maintain sufficient clinics there so that every crippled individual may obtain all the help he needs without any aid from state or federal funds.

Each of these eleven Clinics for Crippled Children is in charge of an orthopedic surgeon, who was selected for that position because of his professional ability. Massachusetts is very fortunate in having orthopedists of international, as well as national, renown; these men are giving their invaluable services for purely nominal fees.

Admission of a crippled child to a clinic is accomplished as follows: The first requirement is that the child be so situated economically that without this aid he would be unable to obtain the medical and surgical care he needs. In other words, his parents must be unable to pay a doctor or a hospital for professional services. Under these circumstances, a physician may sign an application for the admission of a child to a clinic. This application must then be approved by a special committee of the local district medical society. In this way it is believed that clinic abuses can be avoided; that is, persons who are able to pay and should pay will be excluded.

When a child comes to a clinic, he will be examined by the orthopedic consultant, who is in full professional charge of his clinic. He is assisted by the supervisor of Clinics for Crippled Children (a physician on the staff of the State Department of Public Health), by an orthopedic nurse or physiotherapist, and by a medical social worker. As a result of his examination, the surgeon may recommend one or more of several things. He may consider it advisable to admit the child to a hospital for an operation. If so, all that is needed is the consent of the parents; when this is forthcoming, the patient is admitted to any hospital designated by the clinic orthopedic consultant. The expense of hospitalization is met by the Department of Public Health from the federal grant. The consultant is in full charge of the patient while the latter is in the hospital and either operates himself or designates some other competent surgeon.

Many patients seen at the clinics do not require operations; they may need no other treatment than physiotherapy. The consultant prescribes the treat-

ment he wishes given, and arrangements are then made for a physiotherapist to visit the home and carry out the surgeon's recommendations. If possible, the patients in a community who require such treatment are brought together at some convenient available center and are there given treatment, thus conserving the time of the physiotherapist.

Many patients attending the clinics require braces or other apparatus. Ample provision has been made to meet the needs of such children. On the prescription of the surgeon, the brace shop at the Lakeville State Sanatorium will make any sort of apparatus, which is then fitted to the child by the orthopedist at a subsequent clinic. This brace shop is not a new department. It has been in operation for some years but, in order to take care of increased demands upon it, an additional brace-maker has been employed and improved equipment provided. No crippled child in Massachusetts need now be deprived of mechanical aid to help overcome his handicap.

These clinics are all new, made possible by the Social Security Act. They take up the work of helping the needy crippled child at the point where other agencies, public and private, are compelled to cease because of lack of resources. Fortunately, there has been no tendency by any agency to cease the work begun years ago. Quite the contrary is the case. All clinics that existed before federal aid was granted are continuing. Various organizations whose charitable project was the providing of braces for needy crippled children have not ceased their efforts. The Commonwealth is doing as much as ever for the crippled child at the Lakeville State Sanatorium. All children who are the victims of bone and joint tuberculosis will continue to be cared for there. In addition, the General Court of Massachusetts, near the end of its last session, authorized the admission at the Lakeville State Sanatorium of victims of infantile paralysis. In order to treat the latter patients effectively, more equipment has been purchased and physiotherapists have been added to the staff. As long as beds are available at the Lakeville State Sanatorium and at the Massachusetts Hospital School, which is also amply equipped to treat infantile paralysis, all patients who need care will be hospitalized at these institutions.

It is estimated that there are about 10,000 crippled children in Massachusetts. As a result of a survey made by the Department of Public Welfare in 1931, and of an annual census of such children between the ages of 6 and 16, conducted by the Department of Public Welfare and the Department of Education, there are now on the State Register of Crippled Children over 6,000 names. These children are all being investigated to determine their need of aid. Many of them have been well cared for and need nothing more. There probably are many crippled preschool children whose names are not on the State Register. Efforts are being made by the Department of Public Health to find all such children.

Through January 15, thirty-two clinics have been held. At these clinics, 244 children have been seen. Some of them have come to clinics several times each, so the total of clinic visits is 298. Not all the children for whom operations have been recommended have been admitted to hospitals. Many parents have refused consent, but 40 have entered hospitals. More and more parents are consenting as time goes on. Few, however, refuse physiotherapy, consequently approximately 750 treatments have been given by the field physiotherapists. This is in addition to the two physiotherapists who spend their full time in treating the infantile paralysis cases at the Lakeville State Sanatorium.

Tiny Tim, the crippled child in Dickens's "Christmas Carol," did not get the medical aid he so badly needed until the spirits of The Past, The Present and The Future softened old Scrooge's heart and compelled him to provide for Tiny Tim. The Tiny Tims of today, whether rich or poor, without waiting for a reformed Scrooge, can get scientific care, undreamt of in the days of Dickens. All they need do is to accept what is offered them.

DR. SMILLIE APPOINTED PROFESSOR OF PUBLIC HEALTH AND PREVENTIVE MEDICINE AT CORNELL

The trustees of Cornell University have recently announced the appointment of Dr. Wilson G. Smillie as professor of public health and preventive medicine at Cornell University Medical College. He will assume his new duties this fall.

Dr. Smillie, at present professor of public health administration at the Harvard School of Public Health, has been well known in Massachusetts for many years on account of his activities in public health matters and in preventive medicine. He is chairman of the Advisory Committee to the Health Commissioner of the City of Boston and was vice-chairman of the Massachusetts Health Commission, appointed by the governor in 1935 to study public health laws and policies of Massachusetts and to report thereon. The excellence and thoroughness of the report of this committee and of the recommended legislation (House Bill No. 1200) based on its report are, in no small measure, a reflection of the active part played by Dr. Smillie.

MAINE NEWS

On December 18, 1936, a graduate teaching clinic was held at the Central Maine General Hospital in Lewiston under the direction of Dr. William B. Castle, associate professor of medicine, Harvard Medical School. The morning was given up to case presentations and ward walks, and in the evening Dr. Castle presented a paper on "Development of the Knowledge of Vitamin Deficiency Diseases."

On January 15, 1937, Dr. Edwin H. Place spoke on "The Control and Management of Contagious Diseases" and on February 12, 1937, Dr. Soma Weiss will discuss the "Mechanism and Management of Edema."

The educational campaign, under the leadership of Mrs. William Holt of Portland, State chairman of the Women's Field Army of the American Society for the Control of Cancer, is now well under way, and a series of lectures is being given throughout the State before various women's clubs.

On January 19, 1937, Dr. Edward D. Churchill of the Massachusetts General Hospital, Boston, spoke before the Penobscot County Medical Society on "Recent Advances in Thoracic Surgery."

THE FREDERICK HENRY GERRISH LIBRARY

It is a pleasure to announce that a journal and reprint reference library is being established at the Central Maine General Hospital, Lewiston. The Library has been made possible through a grant from the Bingham Associates. Its purpose is to fulfill a long-felt need for an adequate reference medical library in the State. Forty-seven journals have been subscribed for, beginning with the January issue. This Library should facilitate the preparation of papers to be read before County or State Society Meetings or to be submitted for publication in the *Maine Medical Journal*.

In addition to the journals the Library is cataloguing and filing approximately 2,000 reprints, any number of which will be mailed upon request to any member in good standing in the Maine Medical Association. It will be the earnest endeavor of the Library to serve the Maine Medical Association as efficiently as possible with the limited funds at its disposal. The Library will endeavor to comply with all requests made for loans of journals and reprints, and it is hoped that in the future a full-time librarian will be available to aid in the preparation of bibliographies.

Requests for literature should be addressed to the Librarian of the Frederick Henry Gerrish Library.

Members of the Association have been requested to mail two copies of each of their available reprints that have already been published or may be published in the future. It is planned to expand the usefulness of the reprint division by constantly accumulating selected papers.

MEMORIAL TO DR. GEORGE H. BIGELOW

For some months a number of friends of the late Dr. George H. Bigelow, former health commissioner of the Commonwealth and former superintendent of the Massachusetts General Hospital, have been discussing a proposed memorial to him. In May, 1935, Dr. Richard C. Cabot gave a memorial address at Harvard Chapel, which has since been published and widely distributed.

Doctor Cabot's address and the service at which it was delivered gave rise to consideration of a permanent undertaking to keep alive the memory of a great health officer and citizen. Recently, a meeting was held at the Beth Israel Hospital at the invitation of Dr. Charles F. Wilinsky, superintendent, and deputy health commissioner of Boston, at which the whole matter was reviewed.

The conclusions of the group were that a suitable memorial should be established; that it should take the form of an annual lecture by a noted public health leader; that it should be known as "The George H. Bigelow Memorial Lecture"; and that a national committee should be formed for the purpose of securing funds and carrying out the plan. The officers of the committee are the following: Chairman—Henry D. Chadwick, M.D.; Vice-Chairmen—Clarence L. Scamman, M.D.; Charles F. Wilinsky, M.D.; Secretary—Frank Kiernan.

The treasurer will be selected shortly and announcement made in the columns of this *Journal*.

It is the intention of the committee to invite the state health officers of all the states of the Union to serve on the general committee. Doctor Bigelow was known to the health officers of all states because of his prominence in the State and Provincial Health Officers Association.

A meeting of the general committee will be held in the spring. Meanwhile, preliminary activities are being carried on by a small group with Frank Kiernan, formerly executive secretary of the Massachusetts Tuberculosis League, now director of the New York Tuberculosis Health Association, acting as temporary executive.

In addition to the officers enumerated above, those who participated in the conference at Beth Israel Hospital were Gaylord W. Anderson, M.D., Walter P. Bowers, M.D., Ida M. Cannon, R.N., Curtis M. Hilliard, Horace Morison, Benjamin Ragle, M.D., and Wilson G. Smillie, M.D.

MASSACHUSETTS GENERAL HOSPITAL PLANS NEW UNIT

The new George Robert White building to form a central unit in the Massachusetts General Hospital group, has been approved by the Boston board of appeal and the zoning board, and construction will be commenced in the spring. The plans for this $2,000,000 building call for a fifteen-story structure with an over-all height of 188 feet. The zoning restriction of 100 feet has had to be set aside by the city board in favor of the hospital's plans.

The new building, designed by Coolidge, Shepley, Bulfinch and Abbott, will have a ground floor area of 25,000 square feet, but four setbacks will cause it to taper to a 9,000 square foot tower at the thirteenth, fourteenth and fifteenth floors.

RÉSUMÉ OF COMMUNICABLE DISEASES IN MASSACHUSETTS FOR DECEMBER, 1936

Disease	Dec., 1936	Dec., 1935	5-Yr. Average*
Anterior Poliomyelitis	0	21	10
Chicken Pox	1393	1538	1391
Diphtheria	18	52	126
Dog Bite	497	487	331

*Based on figures for preceding five years.

German Measles	63	93	108
Gonorrhea	590	530	578
Lobar Pneumonia	557	566	464
Measles	2006	483	650
Meningococcus Meningitis	12	10	8
Mumps	663	1238	624
Scarlet Fever	753	1011	1105
Syphilis	469	437	410
Tuberculosis, Pulmonary	206	290	283
Tuberculosis, Other Forms	25	20	28
Typhoid Fever	5	5	16
Undulant Fever	3	6	1
Whooping Cough	1738	292	697

RARE DISEASES

Anthrax was reported from Lynn, 2.

Diphtheria was reported from Beverly, 2; Boston, 5; Fall River, 1; Fitchburg, 2; Lowell, 1; Malden, 1; Melrose, 1; Somerville, 1; Swampscott, 1; Waltham, 2; Westboro, 1; total, 18.

Dysentery, amebic, was reported from Boston, 1.

Encephalitis lethargica was reported from Boston, 1; Greenfield, 1; Holyoke, 1; total, 3.

Meningococcus meningitis was reported from Boston, 6; Framingham, 1; Medford, 1; Tewksbury State Infirmary, 3; Uxbridge, 1; total, 12.

Malaria was reported from Medford, 1; Provincetown, 1; total, 2.

Pellagra was reported from Lexington, 1.

Septic sore throat was reported from Brookline, 1; Haverhill, 1; Hyannis, 1; Wellesley, 3; total, 6.

Tetanus was reported from Lowell, 1.

Trachoma was reported from Cambridge, 1.

Trichinosis was reported from Framingham, 1; Lowell, 1; Springfield, 3; total, 5.

Typhoid fever was reported from Cambridge, 1; Lynn, 1; Melrose, 1; New Bedford, 1; Randolph, 1; total, 5.

Undulant fever was reported from Gardner, 1; Georgetown, 1; Worcester, 1; total, 3.

Diphtheria, pulmonary tuberculosis and anterior poliomyelitis had the lowest reported incidence ever recorded for any December or any year to date. The figures for diphtheria were all the more remarkable because the December report showed the second lowest monthly incidence for 1936, whereas in previous years this month was one of highest incidence.

Both for December and the year, the reported incidence of typhoid fever was the lowest ever recorded except for 1935. The Lowell banquet outbreak prevented an all-time record low year.

The December incidence of tuberculosis (other forms) was below the five-year average. The year's incidence was the lowest ever recorded except for 1935.

Reported cases of undulant fever continued above the five-year average. The year 1936 had the highest incidence ever recorded in our State.

The December incidence of lobar pneumonia, although higher than the five-year average, was less than that of 1935. The year's total was the highest recorded for the past ten years.

The December incidence of whooping cough was the highest ever recorded, although the year's figure was below the average of the previous five years.

The December incidence of meningococcus meningitis was above the five-year average. The incidence for the year was the highest recorded since 1919.

There was a noticeable increase in animal rabies. Most of the cases were within an area twenty miles north of Boston.

The reported monthly incidence of measles and mumps was above the five-year average.

German measles and scarlet fever were reported below the five-year average for December.

The incidence of chicken pox was not remarkable.

RECENT DEATH

MOSSMAN—GEORGE MOSSMAN, M.D., of 60 Lawrence Street, Gardner, died at his home on February 7, 1937.

Born in Westminster in 1889, Dr. Mossman attended Cushing Academy and Harvard College. He was graduated from the University of Vermont College of Medicine in 1914. In 1917 he was commissioned second lieutenant in the U. S. Army and served seven months overseas. He began to practice medicine in Gardner in 1921.

He was a Fellow of the Massachusetts Medical Society and the American College of Surgeons and held memberships in the Massachusetts Medico-Legal Society, the American Medical Association and the Masonic Order.

His widow, Mrs. Esther Mossman, one daughter, Mary Mossman, and two sons, George C. Mossman and David L. Mossman, survive him.

REPORTS OF MEETINGS

THE WACHUSETT MEDICAL IMPROVEMENT SOCIETY

A special meeting of the Wachusett Medical Improvement Society was held on December 8, 1936, at the Holden District Hospital.

The meeting was called to order at 8:15 by Dr. Crane, president of the Society.

DR. CRANE: Two weeks ago when Mr. Proctor first talked on Parliamentary Law, he discussed "Conduct of Members at Meetings." Tonight he will talk on "Motions at Meetings."

MR. PROCTOR: I think the subject "Motions" is especially confusing in most minds engaged in the study of parliamentary law, and I believe I have never attended a meeting, even of the Bar Association, when real parliamentary rules were observed. I think I was as much an offender as anyone, but I am going to give you the proper procedure tonight.

MOTIONS

When a matter is to be considered, the parliamentary way of placing it before the body is by a member rising, addressing the chair, gaining recog-

nition, making his motion and resuming his seat. The chair should then call for a second of the motion and if the motion is seconded, which may be done without rising or formally addressing the chair, then the chair should state the motion before the body and debate begins. Of course, if there is no debate, the motion is put at once. It is discretionary with the chair whether he will receive a motion which has not been reduced to writing and it is within his power to insist that the maker thereof write it before he states it at all. The reason for this is that otherwise he must trust to his own memory, which in the case of a lengthy or involved matter may be faulty.

After the main motion has been moved, subsequent motions, with the exception of motions to amend by insertion of other matter, need not be reduced to writing. After the motion has been made, seconded and stated from the chair it cannot be withdrawn by the person making it or by the combined consent of the mover and seconder of the motion except by special leave of the meeting. It is the duty of the chair to restate the motion as many times as he is asked to do so by a member who regularly rises until the motion has been disposed of by vote.

After a motion has been made and is before the house it is subject to subsidiary motions which may be classed as follows:

I. Motions to suppress.
   (a) Previous question.
   (b) Indefinite postponement.
II. Motions to delay.
   (a) Postpone to a time certain.
   (b) Lay on the table.
III. Motion to commit or recommit to a committee.
IV. Motion to amend.

The foregoing, while not all the motions of a subsidiary nature, are the most common.

Motions and subsidiary matters take precedence in the following order:

I. Fixing the time to which to adjourn.
II. A motion to adjourn or dissolve.
III. A motion to take a recess.
IV. Rising to a question of personal privilege.
V. Call for orders of the day.
VI. Laying on the table.
VII. Motion for the previous question.
VIII. To limit or extend the time for debate.
IX. To postpone to a time certain.
X. To refer to a committee.
XI. To amend.
XII. To postpone indefinitely.
XIII. The main motion itself.

Other motions which are considered on the same basis as the main motions and which, therefore, are not permissible while debate is going on, on the main motion, are the following:

I. Motions to take from the table.
II. Motions to reconsider previous action.
III. Motion to reconsider and have entered on the minutes.
IV. Motion to rescind.
V. Motion to expunge from the minutes.
VI. The adoption of a resolution.
VII. Motion to create orders of the day.

The following motions are not debatable:

I. Motion to adjourn.
II. A question of personal privilege.
III. Call for the orders of the day.
IV. Motion to lay on or to take from the table.
V. Motion of a previous question.
VI. Motion to suspend the rules.
VII. Rising to a parliamentary inquiry.
VIII. Call for a division of the house.
IX. Call for a division of the question.

When the main motion is under consideration, it may be adopted as indicated in a previous paper, on a majority vote, and, if lost, may be repeated at the next session.

Motions to Suppress

(a) The previous question. This takes but one form and is "Shall the question be now put?" It is not debatable. A negative vote nowadays is negative of the word "now", that is, if the motion is lost the main question continues before the house for future debate.

In former days a negative vote negatived the putting of the question and hence if the motion was lost the question was not put at all and was withdrawn from the consideration of the meeting altogether.

An affirmative vote has the effect of closing debate and calling for the taking of a vote on the main question. All this has been covered in a previous paper.

(b) Indefinite postponement. The effect of an affirmative vote on this motion is to withdraw the matter from the meeting and is a polite way of ending the proposition under discussion. Once a matter is indefinitely postponed it cannot come again before the session.

A negative vote on the question is equivalent to authorizing the continuance of the discussion of the question before the meeting.

Motions to Postpone

If the meeting desires further time before coming to a vote the proper method is to postpone consideration to a definite day and hour or to lay the matter on the table.

(a) Postponement to a definite time.

This is subject to the abuse of fixing the day so far in advance that it will not arise until after the close of the session. When it is apparent to the chair that the motion is to have this effect, it should be put as a motion for indefinite postponement rather than as a motion to postpone to a day certain. A motion to postpone to a certain day in its proper form may be made during the pendency of a motion to amend, to commit or to postpone indefinitely. It is subject to amendment as to the day

and hour to which it may be postponed and is subject to debate and the previous question may be applied.

Lay on the Table

(b) This is a motion to postpone until the meeting votes to take the matter up again and if it never so votes, of course, the matter remains on the table indefinitely. Its proper purpose is to give the meeting a chance to do something more important in the meantime and to take up the matter when the intermediate business is finished. The motion having been made, it is not debatable.

Motions to Commit or Recommit

The purpose of such a motion is to have the form of the main motion studied more carefully and deliberate consideration given to it by committees which have sufficient time to study the matter. If the body which is meeting has standing committees, the motion may be referred to any one of them which properly has charge of it. If there are no standing committees, a committee may be selected either by the meeting or by the chair. The motion may be referred with instructions to the committee which the committee must, of course, obey or it may be referred without instructions. Part of a motion may be referred to a committee and the rest considered by the meeting or different parts of the same motion may be referred to different committees.

Motions to Amend

(a) Division of question. When the main motion is complicated and composed of two or more parts so far independent of each other as to be susceptible of division into several questions, it may be divided into separate questions upon which several distinct and separate votes may be taken. This must be done by motion regularly made and seconded and is so similar to a motion to amend that it is considered with such motions. If carried, the main question is divided into several independent parts requiring a separate vote on each part. There is no right in an individual member simply to call for a division of the question and the chair should not make the division without a vote of the meeting although such a course is sometimes provided by the general rules of the body. In order to have the motion properly allowed the main question must be susceptible of division in that it prevents points of so distinct a nature that if one or more of them be taken away, the others may stand by themselves as a separate entity. Hence a motion cannot be divided by striking out mere exceptions or provisos and putting them as separate and independent propositions.

Filling Blanks

Where a motion is left with blanks as to the times or numbers and so forth, motions to fill them in are recorded as original motions to be made and decided before the principal question and hence the question may be taken on each such motion by itself or several motions may be made and pending before any of them are put to the question.

In putting such motions, if the greater includes the less, the greater should be put first as, for example, the time farthest away, the amount of a fine, the largest number of a committee and so forth; but if, as sometimes happens, the lesser includes the greater, then the first motion should be put with the least, as, for instance, the rate of interest that the meeting is willing to pay for a loan, the date of the closing of a session by adjournment or the date when the session shall next commence.

Addition, Separation and Transposition

Where two or more separate propositions are interdependent the better method is to incorporate them both in the first proposition to come before the meeting and then reject the second. A still better method, of course, is to refer the whole question to a committee to get the matter into logical and comprehensive form but time does not always permit.

Instead of moving to divide a question it is proper to strike out a part of the motion and if the motion to strike out is carried, the part stricken out may be again put before the meeting as a new motion and as a separate proposition. It is also proper, if a motion or proposition is lengthy and not in logical order, to transpose parts of it so that they will come in a different position in the motion than they previously had occupied. If the matter is divided into sections, the numbering of the sections is a mere clerical job and the numbers may be changed by the clerk without motion.

Modifying a Motion

Once a motion has been put, it is not proper for the moving party to withdraw it and substitute another in its place. This can be done only by leave of the meeting on motion duly made and seconded to withdraw.

The acceptance of amendments by the mover of a motion is against good parliamentary practice and once a motion is before the meeting the amendment should be only upon vote of the meeting itself.

General Rules Relating to Amendments

Amendments may be made in three ways, either by striking out certain words, by inserting certain words, or by striking out certain words and inserting others in their place. Where a proposition consists of several sections, paragraphs or resolutions, the natural order of considering and amending is to begin at the beginning and to proceed through it by paragraphs. If an amendment has been made to the last it is not good order to amend the first thereafter.

Limiting Amendments

An amendment is itself subject to an amendment, but the amendment to the amendment cannot be further amended as this is such a piling of questions upon another as to lead to confusion and embarrassment. If it is desired further to amend an amendment to an amendment, the proper way of

accomplishing this object is to give notice that the person who desires to amend the amendment to the amendment further has such an amendment to offer and to read in debate what he proposes to offer if the amendment to the amendment is defeated as a reason for defeating it.

After the amendment or an amendment thereto has been adopted or rejected it cannot afterwards be further amended, hence if a proposition consists of A and B and the amendment offered is C and C prevails, C cannot thereafter be amended because it has been agreed to in that form. If an amendment is defeated it cannot thereafter be moved again but the question of incompatibility is not one upon which the chair may rule but is a ground for rejecting it by the meeting. If questions of this nature were within the jurisdiction of the presiding officer he might suppress or embarrass the meeting instead of serving its will.

Amendments by Striking Out

If such amendment is rejected it may not thereafter be put but a new amendment may be offered, striking out the same words with others, provided the new words which it is moved to strike out be sufficient to change the sense of the former amendment.

So also, it may be moved again to strike out a part of the words where the vote to strike out the whole as previously negative, provided the part stricken out does not embody the substance of the whole. If the amendment to strike out certain words is carried, no part of the same may be subsequently inserted alone, but the same words may be inserted with others or a part of the same words may be inserted with others, provided the proposition is substantially different from the first.

An amendment to strike out may be amended so that the same words shall be stricken out with others or so that a part, only, of the same words may be stricken out or new words may be inserted in place of those stricken out or in place of a part of those stricken out. If a motion to strike out is pending and it is desired to save part of the words it must be made in an amendment to the amendment for once the words have been stricken out they cannot thereafter be inserted except as above specified and, if the motion to strike out is lost, the words which it has been voted to continue cannot again be stricken out.

In all questions of amendment to amendments the question is first put on the amendment to the amendment before it is put on the first amendment. Where a motion to strike out is made, the form of the motion is whether the words shall stand as part of the principal motion and not whether the words shall be stricken out, and the correct method of stating the question is first to read the passage proposed to be amended as it stands, then the words proposed to be struck out and last, the whole passage as it will stand if the amendment is adopted.

Amendment by Insertion

If such a motion is rejected it cannot thereafter be moved to insert the same words again or a part of them, but it may be moved to insert the entire language with others or a part of the language with others, provided the coherence makes it really a new proposition. So, if a proposal to amend by inserting is carried, it cannot afterwards be moved to strike out the words inserted or a part of them but it may be moved to strike out the same words with others, or a part of the same words with others, provided the coherence be such as to make these propositions really different from the first.

Before the vote is taken, an amendment to insert new words may be amended by striking out a part of the words by inserting new words or by striking out part and inserting part.

If new matter is sought to be inserted and it is favored as a whole but changes are needed, changes must be made by amendment before the question is taken because once the matter is rejected it cannot be moved again and once it is received it cannot thereafter be amended.

On motion to amend by inserting new words, the manner of stating the question is first to read the passage to be amended as it stands, then the words proposed to be inserted and lastly the whole passage as it will stand if the amendment prevails.

Amendments by Striking Out and Inserting

This, is, in fact, a combination of two amendments and hence may be divided into these two forms on vote of the meeting. If divided, the first question is to be taken on the striking out and, if decided in the affirmative, then on inserting but if the former is decided in the negative, the latter is out of order and fails.

If a motion to strike out and insert is decided in the negative, it cannot be made again but it may be moved to strike the same words and insert nothing, or to strike out the same words and insert others, or to strike out the same words and insert the same words with others, or to strike out the same words and insert a part of the same words with others, or to strike out the same words plus other words and insert the same words, or to strike out a part of the same words with others and insert the same words, or to strike out other words and insert the same words, or insert the same words without striking out anything.

If a motion to strike out and insert is decided in the affirmative, it cannot then be moved to insert the words struck out or a part of them, or to strike out the words inserted or a part of them, but it may be moved to insert the same words already stricken out with others, or to insert a part of the same words stricken out with others, or to strike out the words inserted with others, or to strike out a part of the words inserted with others.

A motion to amend by striking out and inserting may be amended before its passage or defeat by striking out, by inserting or by striking out and inserting and hence amendment should be made be-

fore the vote is taken as a vote in the negative leaves the words in the original motion to stand as they are.

An amendment, if decided in the affirmative, means that the part stricken out cannot be restored or the part inserted be amended and, if decided in the negative, the words in the original motion remain as they are. They cannot thereafter be changed, except as stated above.

On a motion to strike out and insert, the manner of stating the question is first to read the whole passage to be amended as it stands; next, the words to be stricken out and, lastly, the whole passage as it will stand when amended.

Amendments Changing the Nature of the Question

The word "amendment" in its original sense, of course, is synonymous with improvement but it is not true that only those may amend who wish to improve a proposition before the meeting. The proposition is before the meeting for all purposes, friendly and unfriendly, and amendments are in order which tend to defeat the original proposition, or to impair its usefulness, or otherwise hamper or curtail it, or to show its absurdity and hence it is in order to alter the nature of a motion entirely and to make it bear a sense different from what was originally intended so that the friends of the original motion, after amendment, may be forced to vote against it.

DISCUSSION

MR. PROCTOR: That is all that I have prepared for this evening, and I would be glad if you would ask me some questions on this, as it is rather hard to follow.

DR. CRANE: Are there any questions?

MEMBER: What do you mean by orders of the day?

MR. PROCTOR: It is very often the order at meetings, to have a regular schedule, which is viewed in the order of the bills on the calendar. It is taken in the order of whatever the calendar calls for.

MEMBER: That can be asked for at any time?

MR. PROCTOR: Yes.

MEMBER: When should a motion be amended?

MR. PROCTOR: If the motion is bothersome, is long and has several propositions, it should be amended first in the part that comes first. The amendment should be amended in the same order. The first thing that is done is to vote on the amendments to the amendment, taking them in order. They should all be disposed of first, then the amendments themselves should be disposed of. We have to dispose of one matter before we take up a new amendment.

MEMBER: Does each amendment have to be voted on first before you can make another one?

MR. PROCTOR: The amendment has to be voted down first, before another one can come in.

MEMBER: Will you please explain point of order?

MR. PROCTOR: Whenever something is being put before a meeting by a member, another member has a right to rise and interrupt the speaker and say, "I rise to point of order." He says, "Dr. Black has entered the meeting without removing his hat," and Dr. Black is asked to remove his hat. Dr. Black calls Dr. Brown a liar, and so Dr. Black is called to order and the chair may rule that the language is objectionable.

MEMBER: If the chair sees a point of order to be taken, can he call it himself?

MR. PROCTOR: Yes, he can hammer with his gavel and call to order.

MEMBER: What happens if the meeting gets unruly?

MR. PROCTOR: The chair raps the gavel until order is reached, but if the meeting gets out of order, he has the right to let it go. If he cannot call it to order, he has no further rights in the matter.

MEMBER: He could not suspend the meeting?

MR. PROCTOR: No, he could not. In town meetings, the chair has the right to call on the town officer and have the unruly member ejected, but in this case, all he can do, is rap for order.

MEMBER: When a motion is made and seconded should the chair say, "The question is open for discussion"?

MR. PROCTOR: It is optional to the chair what he does in that respect. After the meeting is under way, and the people seem eager to discuss the subject, the chair can state that the subject is open for discussion. He recognizes the first man up. If nobody says anything, he generally pauses. He may say, "Are you ready for the question?" or repeat the motion. If it is an important question to be discussed, he tries to get consideration. He cannot hold the meeting too long. If nothing happens, he puts it to a vote.

MEMBER: During the handling of a motion, you frequently hear someone shout "Question."

MR. PROCTOR: It is the chair's duty to bang the gavel. It is the person's duty to rise and move the previous question, instead of speaking out of order.

MEMBER: Please explain the previous question.

MR. PROCTOR: If we had a discussion here as to whether we wanted to introduce a bill as to communications to a doctor being privileged in a court of law, and we heard about four long speeches on one side and another, and you thought that it had been covered, you would rise in your seat and move the previous question, and if it were voted down, the question would be open for further discussion.

MEMBER: What does previous question refer to?

MR. PROCTOR: It refers only to that motion which is now in discussion.

MEMBER: Then the previous question is the last question before the house?

MR. PROCTOR: Yes, it is.

MEMBER: Can the same member ask for as many previous questions as he wants answered?

MR. PROCTOR: Yes, once the vote is taken and the matter disposed of, you can go on to another matter and any man may rise to put that question, too.

MEMBER: If there are about three standing at the same time for recognition, what is done?

MR. PROCTOR: No man has the right to speak more than once except by consent of the meeting. If one has already spoken, he should not be recognized. Otherwise, they are recognized in the order in which they rise.

DR. CRANE: Are there any more questions? We will call the meeting adjourned.

HAMPDEN DISTRICT MEDICAL SOCIETY

The Winter Meeting of the Society was held at the Springfield Academy of Medicine on Tuesday, January 19, 1937, at 4:15 p. m. About 100 members and guests were present.

The meeting was called to order by Dr. Gear, president, and the usual business meeting held, after which the paper for the afternoon was read by Dr. Ernest M. Daland, Chief of Staff, Pondville State Hospital, on the "Do's and Don't's in the Treatment of Cancer."

Dr. Daland brought out the point that delay in beginning treatment brought about by the physician or the lack of facilities had been greatly reduced and that such delay as now exists is chiefly from the delay on the part of the patient in seeking medical advice. *Early diagnosis:* Cancers of the skin, the commonest group, ought to be recognized early enough to be cured in 95 per cent of cases. The chief methods of treatment are x-ray, radium and surgery. Carbon-dioxide snow is destructive and produces scars. Ultraviolet light is stimulating and is contraindicated. The action of x-rays and radium on tumor cells is selective, but applications must be frequent and in adequate dose. Where no deformity will result, excision is best. Most skin tumors are estimated to require 8 erythema doses of x-rays and thicker lesions require higher dosage (voltage) and deeper penetration. *Electrocoagulation:* This is applicable to moles, warts and keratoses, but bipolar current is necessary for penetration. It is applicable to lesions of the pharynx, tonsils and tongue. Pigmented moles are best treated surgically. *Radium* does not work well in the vicinity of cartilages, for example, in the nose or ear, because it sets up a painful perichondritis. *Cancer and syphilis* must be differentiated or may coexist in lesions, such as those on the tongue. *Biopsy*, as well as Wassermann tests, should always be done. Massachusetts has a free diagnostic pathological laboratory in connection with the Huntington Hospital, and containers are furnished by the State for specimens. *Lesions of the lip:* Biopsy should be done, but only under surgical conditions in the case of intact lesions. Surgery, cautery and diathermy are among available measures. *Grading of tumors:* This is done according to divergence from the normal type of cell. The most abnormal spread fastest but also respond most selectively to radiation, if they can be reached. The question of the use of narcotics in cancer patients was also briefly touched on. The guiding principle is to give the least dose that will relieve pain, using nonnarcotic analgesics whenever possible.

After a discussion and questions Dr. Daland was given a rising vote of thanks, and supper was served, the meeting being adjourned.

ANDREW PETERS, M.D., *Reporter.*

GREATER LAWRENCE MEDICAL SOCIETY

A meeting of the Greater Lawrence Medical Society was held on January 14, 1937, in the Flanders Medical Library of the Lawrence General Hospital.

Doctors Kiefer and Marshall of the Lahey Clinic addressed the club on "The Medical and Surgical Treatment of Gastroduodenal Ulcers."

The annual election of officers was held with the following results: President, Dr. N. F. De Cesare; Vice-President, Dr. J. L. O'Reilly; Treasurer, Dr. M. Bier; Secretary, Dr. J. L. Wood.

MIDDLESEX SOUTH DISTRICT MEDICAL SOCIETY

A meeting of the Middlesex South District Medical Society was held at the Hotel Continental, Cambridge, on January 27, 1937. The meeting was called to order by the president, Dr. Sumner H. Remick. Luncheon was served at noon. The meeting was attended by 198 Fellows. The president of the Massachusetts Medical Society, Dr. Charles E. Mongan, was introduced. He spoke about various legislative matters, in which the Society was interested, and summarized several of the bills that were to be considered. Dr. Mongan stated that the Massachusetts Medical Society would cooperate with the Federal Government in social security matters. He also informed the members that the Massachusetts Medical Society was prepared to send speakers to lay organizations, and that the officers would appreciate hearing from anyone who is interested in making arrangements for such talks. The regular business meeting was then begun.

It was voted that arrangements be made for a clinical meeting to be held some time in March. Dr. Remick then introduced the speaker, Dr. Charles H. Lawrence, who is an instructor in the Department of Medicine at Tufts College Medical School and a member of the Staff of the New England Medical Center, where he is in charge of the Endocrine Clinic. He delivered a paper entitled "The Endocrine Treatment of Adolescent and Menopausal Disturbances." His lecture was demonstrated by lantern slides and was most favorably received. His exposition of the subject was clear and of great interest to the members present. The paper was discussed by Dr. Hilbert F. Day, professor of clinical surgery and Dr. Marino Vidoli, instructor in the Department of Pathology at the Tufts College Medical School. Dr. Day made particular reference to the changes in sex characteristics of patients affected by hypernephroma and granulosal cell carcinoma of the ovary. Dr. Vidoli emphasized some of these findings in his report concerning pathologic specimens. Following the discussion, a most instructive question period was held, and Dr. Lawrence

further clarified treatment of various conditions with endocrine products.

It is believed that this is the first time that the subject of endocrine glands has been discussed before such a large audience in Massachusetts, and that great benefit was derived from the paper, since it was delivered on a subject which is so comparatively new.

NOTICES

BOSTON MEDICAL HISTORY CLUB

8 Fenway

Monday, February 15, 1937, at 8:15 p. m.

At the Boston Medical Library

Medical Advertising in Boston During the Civil War. (Stereopticon Slides.) Robert T. Phillips, M.D.

Personal Reminiscences on Weigert, Nissl and Alzheimer. Solomon C. Fuller, M.D.

BENJAMIN SPECTOR, M.D., *Secretary.*

SOUTH END MEDICAL CLUB

The next regular meeting of the South End Medical Club will be held at the office of the Boston Tuberculosis Association, 554 Columbus Avenue, Boston, on Tuesday, February 16, 1937, at 12 noon. The speaker will be William D. McFee, M.D., Chief of Staff, Haverhill Municipal Hospital; consultant in Physical Medicine, Ring Sanatorium and Hospital; consultant in Physiotherapy to the U. S. Veterans' Bureau. His subject will be "Electrical Measures in Physical Medicine." All physicians are cordially invited to attend.

BOSTON SOCIETY OF PSYCHIATRY AND NEUROLOGY

The next meeting of the Society will be held at the Boston Medical Library, on Thursday evening, February 18, 1937, at 8:15 o'clock.

PROGRAM

1. The Mentality of Infants Relieved of Hydrocephalus by Coagulation of the Choroid Plexuses. Dr. Tracy J. Putnam.
2. Intelligence and Socialization. Dr. F. L. Wells.

H. HOUSTON MERRITT, *Secretary.*

ANNUAL CONGRESS ON MEDICAL EDUCATION AND LICENSURE

The thirty-third Annual Congress on Medical Education and Licensure will be held at the Palmer House, Chicago, on Monday and Tuesday, February 15 and 16. Dr. Reginald Fitz, of Boston, will preside at one of the Monday afternoon meetings, and at the other Monday afternoon meeting Dr. Edwin A. Knowlton, of Holyoke, will read a paper entitled, "Some Medical Licensure Problems of Massachusetts." The Massachusetts Medical Society will be officially represented by its secretary, Dr. Alexander S. Begg, and the Massachusetts Board of Registration in Medicine by Dr. Stephen Rushmore.

CLINICS FOR CRIPPLED CHILDREN IN MASSACHUSETTS, UNDER THE PROVISIONS OF THE SOCIAL SECURITY ACT

Clinic — Date — Orthopedic Consultant

Greenfield—February 12—Dr. Harry R. Wheat.
Pittsfield—February 15—Dr. Francis A. Slowick.
Springfield — February 17 — Dr. Garry deN. Hough, Jr.
Lowell—February 17—Dr. Albert H. Brewster.
Worcester—February 19—Dr. John W. O'Meara.
Hyannis—February 23—Dr. Paul Norton.
Fall River—February 26—Dr. Eugene McCarthy.

MEDICAL CLINIC AT THE PETER BENT BRIGHAM HOSPITAL

At 3:30 p. m. on Thursday, February 18, in the Amphitheater of the Peter Bent Brigham Hospital, Dr. Elliott P. Joslin, clinical professor of medicine, Harvard Medical School and physician, New England Deaconess Hospital, will give a medical clinic. To it are cordially invited practitioners and medical students.

BOSTON HEALTH LEAGUE, INC.

There will be a luncheon meeting of the Corporation of the Boston Health League on Wednesday, February 24, 1937, in Perkins Hall, Women's Educational and Industrial Union, 264 Boylston Street, at 12:30 o'clock. Luncheon 75c.

The guest speaker will be Dr. Robert L. DeNormandie who will present the study on "Maternal Mortality in Boston for the Years 1933, 1934 and 1935." This study was conducted by the Obstetrical Society of Boston and the Boston Health Department.

Physicians who were unable to be present when the report was presented at a combined meeting of the Suffolk District Medical Society with the Obstetrical Society of Boston on Wednesday, October 28, 1936, are very welcome.

Please make reservations at the Health League office, 80 Federal Street, Boston (Liberty 8515), by Saturday, February 20.

SOCIETY MEETINGS, CONGRESSES AND CONFERENCES

CALENDAR OF BOSTON DISTRICT FOR THE WEEK BEGINNING MONDAY, FEBRUARY 15, 1937

Monday, February 15—

8:15 p. m. Boston Medical History Club. Boston Medical Library, 8 Fenway.

Tuesday, February 16—

*9 a. m. - 10 a. m. Boston Dispensary, 25 Bennet Street, Boston. Diabetic Clinic. Dr. Jacob Schloss.

9:30 a. m. Massachusetts General Hospital. Thoracic Clinic. Ether Dome.

*12 m. South End Medical Club. Office of the Boston Tuberculosis Association, 554 Columbus Avenue, Boston.

Wednesday, February 17—

8 a. m. Massachusetts General Hospital. Grand Rounds. Orthopedic Department.

*9 a. m. - 10 a. m. Boston Dispensary, 25 Bennet Street, Boston. Hospital Case Presentation. Dr. S. J. Thannhauser.

†12 m. Clinicopathological Conference. Children's Hospital Amphitheater.

4 p. m. - 5 p. m. Surgical Pathological Conference. Dr. Cutler and Dr. Wolbach, Peter Bent Brigham Hospital.

Thursday, February 18—

*8:30-9:30 a. m. Exchange visit, Surgical and Orthopedic Staffs of the Peter Bent Brigham and the Children's Hospitals, held this week at the Peter Bent Brigham Hospital.

9 a. m. Massachusetts General Hospital. Surgical Grand Rounds.

*9 a. m. - 10 a. m. Boston Dispensary, 25 Bennet Street, Boston. Case Histories of Brain Tumors. Dr. Joseph J. Skirball.

9:15 a. m. Massachusetts General Hospital. Neurological Conference. Ether Dome.

12 m. Massachusetts General Hospital. Clinicopathological Conference.

*3:30 p. m. Medical Clinic at the Peter Bent Brigham Hospital. Dr. Elliott P. Joslin.

8:15 p. m. Boston Society of Psychiatry and Neurology. Boston Medical Library, 8 Fenway.

Friday, February 19—

*9 a. m. - 10 a. m. Boston Dispensary, 25 Bennet Street, Boston. Biologic Activities, Commercial Sources, and Therapeutic Considerations of the B Vitamins. Dr. Bernard Jacobson.

12 m. Massachusetts General Hospital. Urological Conference. Outpatient Department.

12 m. Massachusetts General Hospital. Clinical Meeting of the Staff of the Children's Medical Service. Ether Dome.

Saturday, February 20—

*9 a. m. - 10 a. m. Boston Dispensary, 25 Bennet Street, Boston. Hospital Case Presentation. Dr. S. J. Thannhauser.

*10 a. m. - 12 m Staff Rounds at the Peter Bent Brigham Hospital. Conducted by Dr. Henry A. Christian.

Sunday, February 21—

4 p. m. Free public lecture at the Harvard Medical School, Building D, Longwood Avenue, Boston. "The Care of the Eyes." Dr. Theodore L. Terry.

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*Open to the medical profession.
†Open to Fellows of the Massachusetts Medical Society.

February 11—Pentucket Association of Physicians. Hotel Bartlett, 95 Main Street, Haverhill, at 8:30 p. m.

February 12—William Harvey Society, 8 p. m. Auditorium, Beth Israel Hospital, Boston.

February 13—Massachusetts Psychiatric Society, 8 p. m. Boston Psychopathic Hospital.

February 15 and 16—Annual Congress on Medical Education and Licensure. See page 268.

February 15—Boston Medical History Club. See page 268.

February 16—South End Medical Club. See page 268.

February 16—Lawrence Cancer Clinic at 10 a. m. at the Lawrence General Hospital, 1 Garden Street, Lawrence.

February 18—Boston Society of Psychiatry and Neurology. See page 268.

February 18—Medical Clinic at the Peter Bent Brigham Hospital. See page 268.

February 24—Boston Health League, Inc. See page 268.

February 25, 26, 27—The New England Hospital Association. Hotel Statler, Boston.

March 6, June 8 and 9—American Board of Obstetrics and Gynecology. See page 73, issue of January 14.

March 30 - April 2—First International Conference on Fever Therapy. Postponement notice. See page 52, issue of July 2.

April 12-16—The Postgraduate Institute of the Philadelphia County Medical Society. See page 185, issue of January 28.

April 21-24—American Society for Experimental Pathology. See page 1075, issue of May 21.

July 6-11—Fifth International Congress of Hospitals. See page 37, issue of January 7.

October 5-8—American Public Health Association Meeting. New York City.

October 25-29—American College of Surgeons. Chicago, Illinois.

DISTRICT MEDICAL SOCIETIES

ESSEX SOUTH DISTRICT MEDICAL SOCIETY

March 3—The March meeting will be held at the Lynn Hospital. Clinic at 5 p. m. Dinner at 7 p. m. Speaker: Dr. John Fallon of the Fallon Clinic, Worcester. Subject: Uterine Prolapse.

April 7—Essex Sanatorium, Middleton. Clinic at 5 p. m. Dinner at 7 p. m. Speaker: Dr. Francis B. Trudeau of Saranac Lake, New York. Subject: Personal Reminiscences of a Son of a Distinguished Father. (Illustrated.)

May 12—Annual Meeting. Salem Country Club. Speaker: Dr. P. P. Johnson of Beverly. Subject: A Trip to the Bahamas and Guatemala. (Illustrated.)

R. E. STONE, M.D., Secretary.

FRANKLIN DISTRICT MEDICAL SOCIETY

Will meet at the Weldon in Greenfield at 11 a. m. the second Tuesdays of March and May.

CHARLES MOLINE, M.D., Secretary.
Sunderland.

MIDDLESEX EAST DISTRICT MEDICAL SOCIETY

March 16—Danvers State Hospital, Danvers.

May 11—Bear Hill Golf Club, Stoneham.

KENNETH L. MACLACHLAN, M.D., Secretary.
1 Bellevue Avenue, Melrose.

NORFOLK DISTRICT MEDICAL SOCIETY

February 16—See page 138, issue of January 21.

March 30—8:15 p. m. New England Deaconess Hospital. A Symposium on Diabetes entitled "A Survey of the Diabetic Work of the George F. Baker Clinic in the New England Deaconess Hospital." Communications and Case Presentations by the Staff. Drs. Elliott P. Joslin, Howard F. Root, Priscilla White, Alexander Marble and Allen P. Joslin.

May—Annual Meeting. Details to be announced.

Note: The Censors will meet for the examination of candidates on the first Thursday of May. Fee of $10.00 is payable at the time of examination. Application blanks may be obtained by writing the Secretary, furnishing name, address and name of school of graduation in medicine. Application must be made at least three weeks prior to date of examination. Candidates whose applications are on file will receive proper notices.

FRANK S. CRUICKSHANK, M.D., Secretary.
1247 Beacon Street, Brookline.

PLYMOUTH DISTRICT MEDICAL SOCIETY

March 18—11 a. m. Brockton Hospital.

April 15—Annual Meeting. 11 a. m. Ducy Hospital.

May 20—11 a. m. Lakeville State Sanatorium.

FRED F. WEINER, M.D., Secretary.
231 Main Street, Brockton.

SUFFOLK DISTRICT MEDICAL SOCIETY

March 31—Boston Medical Library. 8:15 p. m. "Social Insurance—It Affects the Medical Profession." Dr. Charles E. Mongan. Discussion: Dr. Channing Frothingham.

April 28—Annual Meeting. Boston Medical Library. 8:15 p. m. "Problems in Surgical Diagnosis." Dr. Howard M. Clute.

CONRAD WESSELHOEFT, M.D., President,
CHARLES C. LUND, M.D., Secretary.

WORCESTER DISTRICT MEDICAL SOCIETY

March 10—The Memorial Hospital, Worcester. 6:15 p. m.: Dinner—complimentary by the hospital. 7:30 p. m.: Business session and scientific program.

April 14—Worcester Hahnemann Hospital, Worcester. 6:15 p. m.: Dinner—complimentary by the hospital. 7:30 p. m.: Business session and scientific program.

May 6—At 4:30 in the rooms of the Worcester Medical Library, Inc., at 34 Elm Street, Worcester, will be held the spring meeting of the Board of Censors.

Wednesday Afternoon and Evening, May 12—Annual Meeting. Time and place for this meeting will be announced in an early spring issue of the Journal.

ERWIN C. MILLER, M.D., Secretary.
27 Elm Street, Worcester.

BOOKS RECEIVED FOR REVIEW

On Your Guard! The Prevention and Treatment of Sex Diseases. Carl Warren. 160 pp. New York: Emerson Books, Inc. $1.00.

Synopsis of Ano-Rectal Diseases. Louis J. Hirschman. 288 pp. St. Louis: The C. V. Mosby Company. $3.50.

Traité de Thérapeutique Clinique. Paul Savy. 3 volumes. 2734 pp. Paris: Masson et Cie. 360 fr.

Les Dents Humaines. Morphologie. E. Marseillier. 140 pp. Paris: Gauthier-Villars. 35 fr.

Rural Health Practice. Harry S. Mustard. 603 pp. New York: The Commonwealth Fund. $4.00.

Acta Medica Scandinavica. Supplementum LXXVIII. Rapports et Comptes Rendus du Dix-Septième Congrès de Médecine des Pays du Nord Tenu à Copenhague du 27 au 29 Juin 1935. A. Norgaard. 941 pp. Copenhague: Imprimerie Royale Bagge.

Physical Diagnosis. Ralph H. Major. 457 pp. Philadelphia and London: W. B. Saunders Company. $5.00.

The Management of Obstetric Difficulties. Paul Titus. 879 pp. St. Louis: The C. V. Mosby Company. $8.50.

Physical Therapeutic Methods in Otolaryngology. Abraham R. Hollender. 442 pp. St. Louis: The C. V. Mosby Company. $5.00.

Dietetics Simplified. The Use of Foods in Health and Disease. L. Jean Bogert with Laboratory Section by Mame T. Porter. 637 pp. New York: The Macmillan Company. $3.00.

Childless. A Study of Sterility, Its Causes and Treatment. Sam Gordon Berkow. 307 pp. New York: Lee Furman, Inc. $3.00.

Dietetics for the Clinician. Milton Arlanden Bridges. Third Edition, Thoroughly Revised. 1055 pp. Philadelphia: Lea & Febiger. $10.00.

Administrative Psychiatry. William A. Bryan. 349 pp. New York: W. W. Norton & Company, Inc. $3.50.

Lectures on Embolism and Other Surgical Subjects. The Abraham Flexner Lectures. Series Number Four. Gunnar Nystrom. 213 pp. Baltimore: The Williams & Wilkins Company. $3.00.

Greek Medicine. Clio Medica. Fred B. Lund. 161 pp. New York: Paul B. Hoeber, Inc. $2.00.

Précis de Parasitologie. E. Brumpt. 2,139 pp. Fifth Edition. Paris: Masson et Cie. 200 fr.

The Medical Record Visiting List or Physicians' Diary for 1937. Revised. Baltimore: William Wood & Company.

Kama Sutra. The Hindu Science of Love. Mallinaga Vatsyayana. 127 pp. New York: The Medical Press of New York.

A Manual of Pharmacology. Walter E. Dixon. Revised by W. A. M. Smart. Eighth Edition. 483 pp. Baltimore: William Wood & Company. $6.50.

The Harvey Lectures. Delivered under the Auspices of The Harvey Society of New York. 1935-1936. Series XXXI. 255 pp. Baltimore: The Williams & Wilkins Company. $4.00.

A System of Clinical Medicine. Dealing with the Diagnosis, Prognosis, and Treatment of Disease for Students and Practitioners. Thomas Dixon Savill. Tenth Edition. 1,114 pp. Baltimore: William Wood & Company. $9.00.

Textbook of Medicine. By Various Authors. Edited by J. J. Conybeare. Third Edition. 1,027 pp. Baltimore: William Wood & Company. $7.00.

A Handbook of Hygiene. For Students and Teachers. Cyril G. Eastwood. 358 pp. Baltimore: William Wood & Company. $2.50.

Physiological Principles in Treatment. Sir Walter Langdon-Brown and Reginald Hilton. Seventh Edition. 308 pp. Baltimore: William Wood & Company. $3.00.

Juvenile Paresis. William C. Menninger. The Menninger Clinic Monograph Series No. 1. 199 pp. Baltimore: The Williams & Wilkins Company. $3.00.

BOOK REVIEWS

The Anaemias. Janet M. Vaughan. With Notes on Normal and Pathological Erythropoiesis by Hubert M. Turnbull. Second Edition. 309 pp. London: Oxford University Press. $4.50.

The excellent first edition (1933) of this book has been revised and enlarged in the present volume to include advances of the past two years. This very fact implies the need supplied by this volume: a book representing the rapid transition from morphologic hematology to the newer physiologic approach. Neither aspect of the subject is unduly emphasized at the expense of the other. An impression of definitiveness and compactness is conveyed by every feature of the book, including the clear type and headings. Ten photographs, mostly of x-ray plates of bone changes in blood dyscrasias, are reproduced, as well as nineteen diagrams illustrating quantitative aspects of cell morphology and responses to therapy. There are also four well-chosen color plates of blood cells. The alphabetically-arranged bibliography makes no pretense at completeness but is up-to-date and sufficiently comprehensive. There is an author as well ciently comprehensive. There is an author, as well as a subject, index, which makes the book convenient

Dr. Vaughan's extensive clinical and laboratory experience with blood diseases, in both England and America, assures the absence of local terminology or point of view. The book begins with a succinct discussion of morphologic and chemical aspects of normal erythropoiesis. Then follows a systematic discussion of the various types of anemia. The field is completely covered, including a discussion of the anemias of infancy and childhood. So far as knowledge permits, the classification of the anemias is based on the nature of the underlying physiologic derangement. A valuable feature of the book is the inclusion for each condition of a section on pathologic anatomy, especially of the blood-forming organs. This is contributed by the collaborating pathologist, Dr. Turnbull. Because of

the present successful therapeutic measures for the anemias of nutritional deficiency, other less common varieties are more sharply called to the attention of the physician. For this reason the relatively long chapter on what the author calls "The Unexplained Dyshaemopoietic Anaemias" is decidedly pertinent. In a book of this size, brevity is inevitable; therefore the clinical descriptions of the anemias necessarily cover only the outstanding and significant features. Discussion of treatment is happily limited to what is demonstrably effective, without unnecessary details or descriptions of empirical or outworn methods. The book contains material of interest to the specialist. However, for the physician or surgeon who desires to understand the nature and principles of treatment of the anemias encountered in general practice, based on a proper correlation of clinical and laboratory data, this book provides up-to-date information and a source of ready reference to significant original contributions.

The Extra-Ocular Muscles. A Clinical Study of Normal and Abnormal Ocular Motility. Luther C. Peter. 351 pp. Second Edition. Philadelphia: Lea & Febiger. $4.50.

In the second edition of Dr. Peter's book, an effort has been made to include recent advances in our knowledge of the functions of the extraocular muscles.

Part I deals with anatomy and physiology. In the anatomical considerations, the author, by his own admission, draws largely from Whitnall's "Anatomy of the Human Orbit." In the chapter on physiology, the actions of individual muscles and the conjugate actions are thoroughly covered. The various tests to determine binocular single vision and true stereoscopic vision are described. There may be some objection to the author's use of the terms adduction and abduction to describe the ability of the eyes to overcome increasing prism strength. Ordinarily such action is known as prism convergence or prism divergence, the term "ductions" being reserved for single eye rotations.

Part II covers heterophoria, or the latent tendency to deviation from a normal muscle balance. Various methods of determining the kind and degree of muscle imbalance are well described. The author emphasizes the fact that while prism training is a great aid in reducing an exophoria, it is very disappointing in esophoria.

In Part III the subject of concomitant squint is taken up. The author believes that true alternating squint is rare but, in such cases, fusion is totally absent and can never be developed by any type of orthoptic training. He feels that many apparent alternators are really accidental alternators of a monocular type of squint. Many of the ophthalmologists would disagree with these ideas and are convinced that fusion can be established in essentially alternating squint. In discussing monocular internal squint, the author believes that at least 50 per cent of patients can be cured without operation in children under seven years of age, if the squint is moderate in degree. Here again the author would be challenged as to what actually constitutes a cure. Many children may have straight eyes when wearing their glasses, only to have the squint return when the glasses are removed. Most opthalmologists of today will agree with Dr. Peter in his protest against the advice of some family doctors to let the child "outgrow the squint". The treatment of this condition should be started as soon as it is noticed.

Part IV deals with paralytic squint. The usual paralyses are taken up and discussed. There is a good chapter on special clinical types of ocular muscle palsies.

Part V discusses surgical technics. The author emphasizes an oft-repeated warning against free tenotomies of the internal rectus.

Part VI describes the various types of nystagmus with their interpretations.

The book is a clinical study of normal and abnormal ocular motility, and can be highly recommended to ophthalmologists and students of ophthalmology.

Digestion and Health. Walter B. Cannon. 160 pp. New York: W. W. Norton & Company, Inc. $2.00.

The appearance of this book is significant from two points of view; in one, it gives the public an authoritative work on the digestive processes, and in the other, it indicates a return of Dr. Cannon's thoughts to a phase of physiology in which he has made many notable contributions. The theme of the book is based on Beaumont's studies of Alexis St. Martin, to which has been added the observations on digestion made by the members of the Department of Physiology at Harvard. These are divided into chapters on "The Nature of Appetite and Hunger," on "The Nature of Thirst," on "Digestion and Bodily Vigor," and on "Indigestion from Pain, Worry and Excitement." The one describing digestion and bodily vigor is the most interesting; for here the delicacy, complexity and intimate connections of the digestive, with the other processes in the body through the sympathetic nervous system, as well as the few relations of digestion to health, are outlined. And the "Epilogue" concludes with a quotation from Beaumont, that he might be permitted to cast his "mite into the treasury of knowledge, and to be the means either directly or indirectly, of subserving the cause of truth, and ameliorating the condition of suffering humanity."

The book is written in simple though accurate language, and is illustrated by woodcuts. Apt quotations precede the chapters and references conclude them. Such a book should be found interesting and illuminating to the laity and useful to dietitians, nurses and practitioners.

Principles of Biochemistry. Albert P. Mathews. 512 pp. Baltimore: William Wood & Company. $4.50.

"For nearly forty years I have been teaching biochemistry to students of medicine," says the preface to this new textbook by Professor Mathews. To those students of medicine and biochemistry who were reared on the older textbook of physiologic chemistry by Mathews, this new work will appeal as less encyclopedic and more readable than his former work. In fact, the new book cannot be recognized as another edition, but is in reality a different book. Some of our biochemical faculty members will doubtless regret that the author has "omitted all reference to the literature, as this is not intended to be a reference handbook". In several instances, the superficial presentation of half-truths will perhaps seem reprehensible to deep-thinking scientists. It is better suited, however, to present in interesting form the sort of material that should be learned by first-year medical students or by university students who are majoring in the biochemical sciences. The lucid and direct manner in which the major fields of biochemistry unfold in a scant 500 pages fully justifies the simplified approach.

Two-thirds of the text is devoted to the chemistry and metabolism of the major foodstuffs and related substances, that is, to the glucides, the lipides, and the proteins. The problems of digestion and absorption are, of course, well covered. In addition there are presented many topics of rather recent development. Among these are the metabolism of muscle; the fate of sugar in the cancer cell; cholesterol, sex hormones, and carcinogenic agents; the production of urea from arginine; crystalline enzymes; the mineral metabolism of the body. Due attention is given to clinical states like uremia and diabetes, so that the viewpoint is kept oriented toward medical problems.

There is a section on the chemical behavior of the blood and of other special tissues. Another section discusses the vitamins and the hormones with due regard to the amazing advances in our chemical knowledge of these substances in recent years. Finally, the "income of energy" is presented from the standpoint of basal metabolism and combustion of foodstuffs in health and in fever.

All things considered this is one of the best textbooks of biochemistry now available in English for medical students. It would also be a useful and readable adjunct to the older clinician's library. It will probably not appeal to the professional, scientific biochemist.

A Text-Book of Pharmacology and Therapeutics or the Action of Drugs in Health and Disease. Arthur R. Cushny. Eleventh Edition, Thoroughly Revised by C. W. Edmunds and J. A. Gunn. 808 pp. Philadelphia: Lea & Febiger. $6.50.

This is a new edition of Cushny's standard textbook, the second revision under the editorship of two well-known pharmacologists.

Changes in order and subject matter have been extensive. This book is written from the viewpoint of the drug itself rather than from that of the physiologic system affected. It has always seemed to the reviewer that this mode of approach is the one best calculated to provide knowledge for the student in a form useful for application to clinical medicine.

For many years this book has been a standard text for medical students and the present revision does not diminish its value in this respect.

The latest pharmacopoeial changes have been incorporated. As is inevitable in such a complete revision, typographical errors have crept in and odd methods of expressing dosage, such as that for epinephrine, require clarification.

This text is still the best in English for the use of medical students.

To Raise These Halt. Fred Rothermell. 350 pp. New York: Lee Furman, Inc. $2.50.

This is a medicated novel. A doctor in Vermont, dissatisfied with rural practice, goes to New York as a general practitioner. He is involved in an abortion and ultimately reaches his end in the toils of the law. The story is an old one and is not particularly well told. Medical references appear in almost every line, which certainly gives the doctor no relief from his daily tasks. The public, however, may find something of interest in this novel, in which much of the life of a doctor is accurately described.

Treatment in General Practice. The Management of Some Major Medical Disorders. Articles Republished from the *British Medical Journal*. 250 pp. New York: Paul B. Hoeber, Inc. $3.50.

This little book consists of a series of articles republished from the *British Medical Journal*. Except for some articles on the "Acute Specific Fevers", the book consists of little essays on the treatment of disorders of the heart and lungs. Like most English articles, they are charmingly written in simple, easy style and distinguished by their practical character. Some of the therapeutic maneuvers seem outdated to one brought up in the highly rarefied scientific atmosphere of Boston, but undoubtedly the practical British physician must find them of some value. Thus one finds under hemoptysis that "the coagulability of the blood may be diminished by a mixture such as sodium nitrate grains 30, tinct. aurantii minims 5, aquam ad ℥i, ℥i t. d. s., or by applying 2 or 3 leeches over the skin of the chest, and by giving a grape-fruit every day." However, it must not be supposed that the latest developments are left out, since the book is an example of much of what is England: great tradition for the past and yet great knowledge of the present. The outstanding feature of the volume is the care with which practical directions are set down for the physician in his treatment of these everyday disorders.